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THE PAPER TRADE JOURNAL.

"The Consumption of Paper is the Measure of a People's Culture."

VOLUME XXIV.—NO. 26. NEW YORK, JUNE 29, 1895. WHOLE NUMBER 1104.

Trade Topics.

Machine for Washing Paper Stock.

An illustration is given of a new machine for washing and preparing paper stock, the object being to provide a machine into which the stock may be fed continuously and be thoroughly washed and scoured while passing through it and discharged therefrom after being separated from the water with which it is treated.

Figure 1 is a side elevation of the machine; Fig. 2 is a longitudinal sectional view, and Fig. 3 is a transverse sectional view, taken through the discharge pipe or opening.

There is an outer casing, a a, preferably formed of two parts, a' a^2, the two parts being adapted to join together so that the upper part a' is removable.

Journaled in suitable bearings, b b', at each end of the casing, which bearings are also formed in the nature of glands or stuffing boxes to prevent leakage from the casing, is a revolving cylinder or rubber, c, formed on its outer periphery with ribs, c', and flexible wipers or rubbers, c^2, preferably made of leather or other suitable flexible material. These ribs or wipers are placed on the cylinder in a spiral direction, and the cylinder itself is tapered from end to end so as to be substantially conical in shape.

The bottom portion, a^2, of the outer casing is recessed on each side, as shown at a^3, and adapted to receive projecting ribs or bars a^5, which extend from side to side of the casing on the arc of a circle whose centre is at the centre of the revolving cylinder c. On these bars is supported a screen, d, having meshes sufficiently fine to prevent the escape of any of the paper stock, but to permit the water to pass through readily.

The upper part of the casing a' is adapted to fit over the lower part a^2, the respective parts having projecting flanges, a^6 a^7, adapted to be united together by bolts or secured in any other suitable manner, the upper flange a^6 resting on the bars a^5, and thus serving to hold the screen firmly in position when the parts are united together. The rear or large end of the cylinder or rubber c is provided with a series of blades, c^3 c^4, each alternate blade, c^3, being preferably extended so as to run in close proximity to the screen d, which is extended from one end of the casing to the other. The other blades, c^4, are preferably made shorter and project slightly beyond the main body of the cylinder or rubber c.

The upper half, a', of the casing a a is formed eccentric to the revolving rubber c; that is to say its top is farther removed from the cone and its rubbers than the sides, so as to form a reservoir or rubbing chamber, a^8, in the upper part of the casing. An auxiliary chamber, a^9, in which the blades c^3 c^4 are adapted to extend, is formed at the rear end of the casing by a partition, a^{10}, which extends downwardly from the upper half a' of the casing a a to within close proximity to the main body of the rubber or cone c. This partition a^{10} prevents the passage of the stock from the chamber a^8 to the chamber a^9 in the upper half of the casing; the lower half of the casing, the bottom of which is formed of the screen d, having no such obstruction, so that the stock is carried down along the screen d before it can pass into contact with the blades c^3 c^4.

The stock mixed with a sufficient quantity of water is admitted through the supply pipe or opening a^{11} at the small end of the casing, and is carried by the ribs and wipers c' c^2 around with the rubbing cylinder.

The enlarged space or reservoir in the top of the casing is kept well supplied with water, both by reason of the ample supply pipes, and by being more or less retained therein by the action of the cylinder. The stock, being carried around by the cylinder, will follow the outer walls of the casing by the centrifugal force, and will pass upwardly into the reservoir, where it will be thoroughly rubbed, or, perhaps more properly speaking, churned, by the action of the ribs and wipers and the centrifugal force of the revolving cylinder.

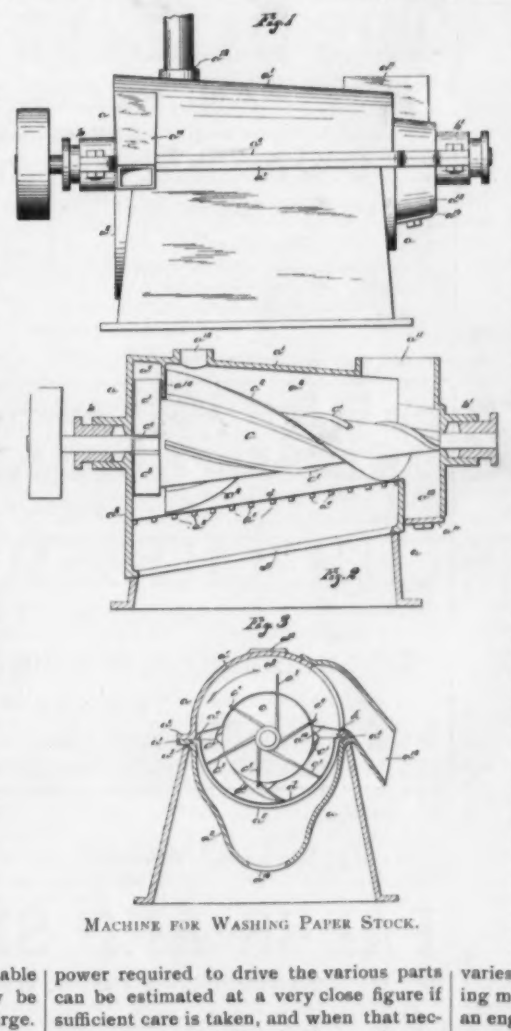
An auxiliary opening, a^{12}, is provided in close proximity to the partition a^{10}, through which a stream of water is introduced to come in contact with the stock prior to the time it passes through the chamber a^9 in contact with the lifting blades c^3 c^4.

To guard against damaging the screen or other portions of the machine by the introduction of hard foreign substances, there is immediately under the supply opening a^{11} a chamber, a^{13}, having a removable plate, a^{14}, at its bottom. This chamber is made of considerable depth, and in the event that a heavy foreign substance enters with the stock it drops into this chamber and may be removed by removing the plate a^{14}. If desired this plate, a^{14}, may be secured so as to become disengaged under an unusual pressure and thus automatically release any hard foreign substance in the event that it should be forced into the pocket or chamber by the action of the revolving cylinder.

The stock is gradually carried by the ribs and rubbers along the screen d and forced into the chamber a^9, where it is engaged by the lifting blades c^3 c^4, and carried around in contact with the screen and discharged through the outlet a^{15}.

It will be noticed that the blades c^3 c^4 are not radial, but are formed tangent to a circle slightly larger than the shaft or journals of the revolving cone or cylinder, the effect being to incline the blades backwardly in the direction of travel, which causes the stock engaged thereby to be pushed to a slight extent outwardly in contact with the screen so as to press the water out of it as it passes around with the blades, and also to more readily clear the blades and be discharged through the opening a^{15} by the revolution thereof.

The lower portion, a^2, of the outer casing is extended downwardly, and is provided with a suitable outlet opening, a^{16}, through which the water is permitted to escape into any suitable trough or conduit by which it may be conveyed to any desired point of discharge.



MACHINE FOR WASHING PAPER STOCK.

Buying An Engine.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

BY W. H. WESTON.

In buying an engine for any line of work the first thing to consider is the size which will be the most profitable, and this point has more importance than is generally conceded. To buy a small engine in order to save on its first cost, and then to overload it, is a method which will always be costly in the long run, because such an engine will not use steam economically and will wear out faster than if worked moderately.

Again, to put in an engine larger than is necessary to do the work, with the expectation of having it for an increase of business in the future, is bad practice, because such an engine running at an underload is much more wasteful of steam than one which is run with an overload. Of course if an increase in the amount of work to be done is probable soon after the engine is put in, it is advisable to allow for the greatest load; and running the engine at an underload until the full load is put onto it is not a serious expense.

Don't buy an engine with its horse power rated at a late cut-off; because to run it at such a cut-off is not economy of steam, and if after buying it is wished to put it on a shorter cut-off the engine at such a point will not give the required amount of power. Therefore it is always very important to be sure of a proper relation between the point of cut-off figured on and the horse power for which the engine is sold, the initial steam pressure also being fixed at a proper figure, which, in all ordinary practice, should never be less than 80 pounds. Have the horse power figured on whatever steam pressure you are going to carry on your boilers, whether 80, 90 or 100 pounds, any of which are in common use on non-compound engines, and either of which may be economically used as steam plants are now put in. Manufacturing and machine work have come to such a state that the amount of power required to drive the various parts can be estimated at a very close figure if sufficient care is taken, and when that necessary for running the shafting and overcoming the engine friction, and any special elements which may come into existence in a given place, are also allowed for, there is no reason why an engine power should not be estimated with tolerable accuracy.

It hardly seems necessary to dwell on the importance of accuracy in getting at the amount of power required if the engine is to run economically. In places where there is a wide range in the amount of work or the nature of the work, and consequently much greater power is required at one time than another, it is a matter of considerable moment to decide what size of engine to put in. For instance, in a situation where 200 horse power is needed, say, one-half or one-third of the time, and not over 100 or 125 horse power during the other part, there is not usually any economy in having a 200 horse engine for full load, and using it part of the time with only one-half of its properly rated load, for at such a small per cent. of its power it will be very wasteful of steam. In a case like this it would be advisable to buy two engines which will aggregate the total power used at any time, and thus, when only part of the power is wanted, run one engine.

As to the cost of installing a plant in this way, it will not be much greater than if only one large engine was put in, for the relative cost of common stationary engines is about in proportion to their power. Whatever extra expense there might be in putting in two engines instead of one would very soon be made up by the increased economy of steam.

The next consideration is whether the engine shall be compound condensing or not. Of course in most instances where there is an opportunity to use such an engine it should be done, on account of the greater economy in the production of power. And as the total cost of putting in a compound condensing plant is not much in excess of a simple plant of the same power, there is no good reason for not using it where opportunity offers a chance.

In a situation where simple engines are to be used, and the power is small in each—provided more than one is to be put in—the next question to settle is whether the engine or engines shall be high or low speed. Special circumstances sometimes make it advisable to choose between these two kinds of engine. For instance, in some places where the amount of space available for an engine is very limited, and it is of importance not to have much shafting, a high speed engine may be of advantage, provided there are no special circumstances about the situation to make it objectionable, and if such an engine is of good form and material, and is properly cared for, it will give good service.

The next question to be settled is—if the engine is a simple one—whether it shall be automatic or throttling. Taking a place where comparatively small power is wanted, and that for only a portion of the year, it may be advisable to buy a throttling engine in preference to a more expensive automatic engine, as the latter, on account of its greater complication of detail, will cost considerably more than a common simple engine which is controlled by a fixed cut-off and a governor in the steam pipe. In isolated localities there is not the liability to stoppages for repairs and adjustments in the case of the throttling engine.

Another point for consideration is what the work on the engine will be. As there is no form of engine which is suited to all kinds of work, it is of the greatest importance to take this matter into account. Where the work is intermittent and the load varies from nothing to full power, as in rolling mills, it is of course necessary to have an engine which is entirely different in detail and construction from one used for a cotton or flour mill, where the load is uniform and exact regulation in regard to speed is imperative for perfect production. The claims of engine builders who pretend that they have an engine which is suitable for any kind of work should receive no consideration.

Take, for example, a rolling mill engine. If it is to be satisfactory it must be immensely heavy in every one of its parts, and should have large valves, preferably of the piston type, and large port openings and direct steam passages, so that the full steam pressure can be thrown on the cylinders by the governor at the instant of change of load from that of the engine friction to that of an ingot going into the rolls. A cotton mill engine to be efficient will be much lighter in construction, with smaller valves and ports and a delicate and sensitive arrangement of cut-off and valve gear.

Whatever the kind of engine decided upon, there is one part which should always be solid and heavy, and that is the bed casting; and it should be in one piece if possible. Have all running surfaces of large area, and the shaft journals and crank pins especially large in area, large diameter being more important than length in these two parts, it being advantageous to have them much larger than they are made in many engines at present.

When the cross head is of such shape as to permit, have that end of the connecting rod solid. This can be done wherever the wrist pin is removable, and it gives a much better arrangement than a strap end, and one in which the brasses will not wear nearly as fast. Have the shaft of steel, either of fluid compressed, or of forgings of open hearth steel.

The shaft brasses should be carefully scraped to the journals and fitted in the pillow blocks in the most solid manner possible. The matter of workmanship in fitting them in place is of great importance, and also the method of construction of the pillow blocks and cap, in order that the brasses may be held absolutely solid in place, and also that ample allowance may be made for taking up wear.

The piston rods of any engine of moderate or large size should be provided with metallic rod packing, because it is less expensive in the long run, and when used it keeps the rods in perfect condition and free from excessive wear. The piston rods should be made of steel forgings, the same as mentioned for the shaft, and the cylinder should be a casting of hard, close grained iron.

From Apprentice to Superintendent.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

BY B. F. FELLS.

The apprentice who has to pay his way while working out his time makes the best record for himself, and ultimately proves the most useful. Ambitious and wealthy fathers frequently induce their sons to don the overalls and jumper and go to work in the mill with a view to learning the business. Results show that the percentage of successful apprentices who have been placed in shops by rich fathers, with the understanding that wages were no object, is small. The lad who takes hold with a will, and has to earn his living at the same time, is the one who generally wins.

Besides this there is another feature. That is the question of saving a little money for the purpose of obtaining instruction from fellow workmen. Circumstances were such in my case that I had not only to earn my way along the line, but having no rich father to advance a few dollars for special purposes it became necessary for me to save a portion of my monthly wages wherewith to pay fees for tutoring. He who undertakes to fit himself for a manager must acquire the facility of estimating on the various points pertaining to sample production, details of weight, &c., from a given sample, so that when called upon to reproduce the same he will know how to go to work. I had been at work about a year. During this time I had managed to deposit a portion of my wages in the bank each pay day, until I had accumulated in the neighborhood of $40. I concluded to invest this money in return for a series of lessons on paper manufacture from the cost side. I had paid no attention to this part before. Therefore I was ignorant of even the first rudiments. The second hand of the room in the same mill was a man of large experience, and he agreed in consideration of $10 to initiate me in the principles of analyzing a given sample. I met him at his residence one evening per week until I was qualified. In obedience to the request of my new instructor I bought the necessary articles with which to start work. This man, although not very far advanced in years, possessed a grand scope of knowledge, and it was always a wonder to me why he should persist in confining himself to the comparatively low salaried position which he then held, when his combined knowledge and skill fitted him for a much higher station. Adverse circumstances were undoubtedly at the root of it.

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taining the precise weight required to reproduce a given sample, the character of the pulp, &c., should be considered. He assorted one from a lot and proceeded to explain the preliminary operations. One of the first points which we studied was in reference to ascertaining the correct weight of a given sample; for uniformity of weight in filling a contract and giving estimates on cost are important parts of the business. There are several methods in vogue for getting close estimates on the weight of samples, most of which are familiar, but this man's method seems novel and is therefore given here: (1) Cut the sample to a special size; (2) ascertain its exact weight in grains; (3) ascertain the total number of square inches in the full width required by consulting the tables; (4) multiply the sum by the number of grains which the sample weighs; (5) reduce the quotient to ounces and fractions of ounces, dividing by 437½, and the answer will be the weight of 36 square inches of paper.

The table is given here.

Inches in Width.	Sq. Inches per Sq. Yard.
22	792
24	864
26	936
27	972
28	1,008
29	1,044
30	1,080
32	1,152
34	1,224

How to use the table is shown by the following: If the sample of paper in hand has been cut to 1 inch square, and if the full width to which it belongs is 27 inches, then the number of square inches contained in the full width is known by the figure opposite 27 in the table, which is 972. Thus, if there are 972 square inches in 1 yard, a single square inch must weigh one nine hundred and seventy-second part of the weight of the whole yard. If, for example, the 1 square inch is found to weigh 4 grains, the whole 972 square inches must weigh four times 972, or 3,888 grains; consequently the whole yard weighs 3,888 grains, which may be reduced to ounces by dividing this sum by 437½. Thus 437.5 ÷ 3,888 = 8.88, or nearly $8\frac{8}{10}$ ounces to 1 yard of finished material. Therefore the finished weight is 8.88 ounces. Some special pieces of apparatus are needed to carry out this method of figuring, including a pair of scales and a set of perfectly true and sharp steel dies, varying from 1 square inch to 3 or more, according to the size of the sample obtained. If, for instance, the sample is found to be less than 2 square inches in size, it must be stamped with the 1 inch die. If over 2 inches in dimension, then the 2 inch die may be used. A good sized note-book and a pencil should be in the pocket of the observing apprentice, who can then record things of import which meet his eye, and eventually, when he gets in control of a mill, he can apply to practice that of which he has gained information.

I recollect making notes of a very unique system for conveying purposes while visiting a locality some years ago, and having seen the same arrangement adopted with success, and according to the record and plans in my note book, a few remarks about the same may be of interest to proprietors contemplating putting in a freight carrier system for handling products. The carrier consists of an endless two strand iron chain to which are fastened boards, the attachment being effected by bolting to the chain links. This endless traveling apron, which is very strong and about 8 feet wide, passes over a drum at each end, and the drum at the mill terminus is revolved by steam or water power. The apron can be very long, extending from the mill to the warehouse or from the shipping room to the railroad platform or wherever desirable, as there are sustaining rollers beneath the top line of the apron, so that the same is firmly supported. Such a system saves much handling of material.

It has been said that a superintendent sometimes ruins a mill before he runs one successfully. This ought not to be. The superintendent should get his practice and experience before he tries to manage a mill. Experimenting doesn't pay in pulp mills. It is during the apprenticeship period that one should observe and benefit by the failings of others, so that he will not repeat the same mistakes when he gets control. Take the web cutter, for instance; much time is often lost and money spent by superintendents who have web cutters rebuilt when worn out, only to find that they are practically useless after having been turned, and it would have been more profitable for the mill if they had been discarded and substituted by new. Thus one learns by experience. Let the learning be acquired early, and the apprentice will go out well equipped to make a mark in his chosen profession.

(To be continued.)

Correspondence.

FOX RIVER VALLEY.

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., June 25, 1895.

The usual summer dull season seems to tarry this year, and very few of the mills are complaining as to the amount of orders coming to them. In fact, the season is more than usually busy in this valley. There seems to be no indication at present why the stiffening of the price of print paper should not be maintained, and manufacturers feel that if it continues it will exert a salutary effect upon other grades of product.

For the past three weeks there has been no apparent change in the level of Lake Winnebago, or, in other words, about as much water has been drawn out as has been running in. In view of this fact and in order, if possible, to forestall any possible action of the Government in the matter, a meeting of the manufacturers was held this afternoon at the office of the Kimberly & Clark Company, in Neenah, to see if anything could be done in the premises. All of the manufacturers with one exception, were represented, and after considering the matter, Engineer T. W. Orbison was authorized to go to Oshkosh and measure the amount of water flowing into the lake at its source there, in order that a basis may be secured from which to figure further reductions, in case they shall be deemed advisable. Mr. Orbison is to report at a future meeting.

Your correspondent has previously referred at some length to the situation at Kaukauna, caused by the Green Bay and Mississippi Canal Company serving an injunction upon the Kaukauna Water Power Company to prevent it from drawing water from the river, whereby the Badger Paper Company, the Kaukauna Fibre Company and other institutions were deprived of motive power. It now seems that there is a prospect that the Green Bay and Mississippi Canal Company may also be made to suffer and that the institutions on the north side of the river leasing water from it may be closed up as tightly as those on the south side of the river have been. This result is of course conditioned upon the results of certain legal proceedings which are now being conducted by the Kaukauna Water Power Company. Not long ago a decision was handed down by the Supreme Court in an action brought by the Kaukauna Water Power Company against the Green Bay and Mississippi Canal Company, according to the terms of which the Mississippi people were prevented from diverting the water from its natural channel; in other words, if they took water from the Kaukauna dam, they must return it to the river again immediately below the dam in order that it might flow along down its natural course, passing the property of other parties, in this case the same being the Kaukauna Water Power Company, which owns several islands in the river at Kaukauna, from which, according to the decision, the natural flowage of the river must not be diverted.

It happens, therefore, that under this decision the Mississippi Canal Company has no right to divert the water through the Government canal in order to supply the mills of the Kaukauna Paper Company, the Thilmany Paper and Pulp Mills, the Kaukauna Electric Light Company, &c.; and as a matter of fact the Kaukauna Water Power Company is at present taking the necessary steps to enjoin the Mississippi Canal Company therefrom, and to bar the use of water in the mills mentioned on the north side of the river. It is understood that this action will be taken as soon as the legal formalities can be gone through with. What the result will be cannot be foreseen. It would seem as though the rights and limitations of the two companies, as set forth by the courts, would offset each other and afford a basis for compromise, although whether or not a compromise will be effected is a question.

Mention was made in my last letter of the determination of the Grand Rapids Paper and Pulp Company to delay no longer in the matter of building a paper and pulp plant on the Wisconsin River. The plans of the improvement have been prepared by O'Keefe & Orbison, of this city, and the work will begin as soon as possible under the superintendance of O'Keefe & Orbison. As shown by the plans, the improvement contemplates the construction of dams in addition to the mill buildings, and both departments of the work will go forward at the same time. It is hoped that the mill may be ready to go into operation about the first of next year. The total cost of the work will be in the neighborhood of $300,000. The plans indicate that the dam proper will be 650 feet long, and that in additio. there will be a sluiceway 270 feet long, two embankments, one 450 feet long and the other 200 feet long, and a wing dam 300 feet long extending to the mill buildings. The head of water will be about 12 feet, and the power furnished will amount to about 2,700 horse power.

In regard to the buildings which are to be erected it may be mentioned that they will be constructed of brick and all will be one story and basement in height. The dimensions of the buildings and the details in regard to the machinery, as shown in the plans, are as follows: The grinder room and wet machine room will be 83x106 feet, and will contain eight New England grinders; the wood room will be 48x56 feet; the engine room will be 70x96 feet, and will contain eight engines; the machine room will be 70x168 feet, and will contain two machines, probably 116 and 86 inches in width; the finishing room will be 48x96 feet; the boiler house will be 46x52 feet, for three boilers, and will have a brick stack 130 feet in height, with a 6 foot flue. There will be no rag department, as the mill is intended to make wood print. The location of the plant will be about 3 miles above Grand Rapids, on the Wisconsin River.

The virtue of automatic sprinklers was thoroughly demonstrated a day or two ago at the Lincoln mill of the Fox River Paper Company. A fire started in some unknown way in one of the rag bins, and the first notice that the mill people had of it was from the dripping of water from the bin. The sprinkler head had promptly opened and deluged the place with water, so that the damage was merely nominal.

A small fire occurred last week also at the Appleton Woolen Mills, the roof of the warehouse taking fire from sparks from the smoke stack. The blaze was put out by employees of the mill.

Some little time ago the Marinette and Menominee Paper Company began to make print paper in addition to its regular line of manillas, and now it is announced that it will in the near future go into the higher grades, including book paper. It is the intention of the company to make papers which will compete with those made in this valley. To this end a considerable quantity of new machinery will be put in. The new Park Mill will be put on the higher grade. It is possible, too, that the company may put up a new sulphite mill on the Michigan side of the river within a year.

The new engine for the Shattuck & Babcock Company's mill at De Pere has been ordered from the E. P. Allis people, of Milwaukee, and a sufficient quantity of new Root boilers to operate it have also been ordered. A new boiler and engine house will be put up to accommodate them. The engine will be of about 1,000 horse power.

The work on the roof of the mill of the Atlas Paper Company has been delayed by the non-arrival of the iron work, which only came a day or two ago. About ten days will be needed to finish the job. The new top driers have been placed on two of the three machines, and the mill is being thoroughly renovated throughout, so that when it goes into operation again it will be in first-class shape.

Traveling salesman Ferguson, on his recent trip through the East, secured so many orders for the Appleton Woolen Mills felts that the mill has been pushed to its full capacity to fill them. There is no famine in orders reported from the Appleton Woolen Mills.

Fred Dickerson departs to-morrow on a bicycle trip to Niagara Falls, where his father is the proprietor of the Western Screen Plate Works. He figures that the journey will take about three weeks by the route which he intends to go; that is, by way of the Miami Valley, where he expects to pick up some orders for the concern, which he will represent. After a week at Niagara he expects to start on his return journey.

E. A. Edmonds, of Oconto Falls, arrived in Appleton on business yesterday.

H. T. Blethen, of Scranton, Pa., is doing business in this valley.

Superintendent Campbell lately returned from a trip to the markets in the interest of the Howard Paper Company, of Menasha.

T. W. Orbison lately returned from a business trip to Topeka, Kan.

Jos. Thomas has returned from the West fully recuperated in health, and has resumed his duties at the office of the Pulp Wood Supply Company.

Dr. Dessauer departed last week on his trip to the East, which has been outlined in these columns.

C. F. Bassett, of New York, was a recent visitor to this valley. FOX RIVER.

MIAMI VALLEY.

[FROM OUR REGULAR CORRESPONDENT.]

DAYTON, Ohio, June 26, 1895.

At this season, when business affairs are probably more distinctively dormant than at any earlier or succeeding period, no commanding change in actual trade conditions or in the general tenor of business can be expected. As a sequence there is none to be reported.

Although mentioned in my last letter that the mills of the Louis Sniders' Sons' Paper Company would most likely be operated by the creditors for their general benefit, I am forced to contradict the prediction. A late meeting of the general creditors, through their representatives, came too late for publication last week, although prior to the assembling of the interested parties the impression prevailed as set forth in the preceding correspondence.

However, at the business session the complexion of the situation was markedly changed, although the sentiment of the creditors seemed to conflict. Each agreed that it would hardly prove a losing movement to operate the mills in their personal behalf, although the final ultimatum dictates that the mills shall be sold forthwith. Trustee Boyd called the representatives together, among whom were B. D. Rising, of Mittineague, Mass.; B. N. Jackson, Pawtucket, R. I.; George E. Bardeen, Otsego, Mich.; George B. Fox, Lockland, Ohio, and S. R. Burton, Cincinnati. They thoroughly examined the Fordham, Franklin and Fair Grove mills and reported that everything was in first-class shape, and in short in a much better condition than they had expected to find matters.

Nevertheless, their policy decrees that the mills shall be sold at the earliest moment while they are in such good working order, the creditors' representatives feeling that they are more marketable now than they ever have been. Before adjourning they complimented Trustee Boyd upon the careful management of his trust.

These mills form one of the leading business institutions of the country, and it is to be hoped, for the benefit of the Miami Val-

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PAPER MILLS,
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——ALL TESTS SODA ASH AND ALKALI.——
Sole Agents for the United States and Canada of THE UNITED ALKALI CO., Ltd., of Great Britain,
FOR THE SALE OF THEIR VARIOUS BRANDS OF BLEACHING POWDER.

ley and the general interests of the trade, that they shall pass into reputable and enterprising hands. Just when a sale will be consummated is, of course, a matter of the future.

It is expected here that the midsummer meeting of the American Paper Manufacturers' Association will be held shortly. The Miami Valley is not so far "out West" that the Eastern members of the trade cannot honor one of the greatest paper producing sections in the world. Any city in the valley is as delightful as Saratoga, and residents of the Buckeye State are noted for their hospitality.

Dayton especially is a city of conventions, not a single week passing without a notable event of this sort in our midst. Attractions of all descriptions, natural, artificial and otherwise, exist here.

In speaking recently of the purchase by Paul J. Sorg in New York reminds that he made an equally big transfer only a short time before in Chicago. The Groveland apartment building and ground, at the southwest corner of Groveland avenue and Thirty-first street, was sold by him to Charles E. Coogan for $550,000, and by the latter transferred to Frank H. Roy for the same consideration. The structure is elegant, eight stories high, with the dimensions of 110x100 feet.

While speaking of sky-scrapers it may be added that six or seven Daytonians closely associated with the paper trade now have plans consummated for the erection of as many office and apartment fireproof buildings, ranging in height from eight to ten stories. Such is the increasing vigor of greater Dayton. W. P. Callahan, of the Levis Paper Mill, two years ago erected a ten story stone office and bank structure on one of the prominent uptown corners. It was his desire to construct a yet more massive building, but ground contiguous could not be purchased for love, money, good will or any other consideration. That structure is a lasting monument to the Gem City of Ohio.

By the way, there's little West Carrollton! Certainly, you may say that it is only a suburb of Dayton. The latter city duly recognizes the honor. That hustling village, populated almost exclusively by paper makers and employees of the George H. Friend Paper Company, is just now making strides which towns and county seats of 8,000 and 10,000 people might do well to duplicate. A company of paper makers—hardworking toilers—has been organized and will erect a handsome store and hall building at a cost far into the thousands. The structure will carry a dome which will lift its head to a commanding altitude, and there will be many other evidences of later day "ginger-bread" architectural fancies. This will prove strictly a business investment and is something of which the town is sorely in need.

Referring to other matters in which that little town is interested, it may be well to mention that the work on the new furnace room at the mills has about been completed, and that the tablet factory will hereafter be lighted by electricity. An institution which employs in the neighborhood of 600 persons in its various departments cannot exist very well even in a small place without such modern conveniences. A firm which loads daily from eight to nine cars of finished products and ships the same regularly cannot but progress in any line of improvement.

The engagement of Ella Lowe, daughter of E. Houston Lowe, to L. W. Gunckel, treasurer of the Seybold Machine Works, has been announced. Miss Lowe has just returned from a nine months' tour of Europe.

Those poor manufacturers in Wisconsin who are so distracted over the drought that they refuse to be comforted even with the familiar sling, "Come, have something!" have indeed the unanimous sympathy of the Miami Valleyites. Several good rains have fallen in this neighborhood lately, and, as far as ascertained, no mills have closed on account of lack of water. There was a report current that a mill at Delaware and one or two other central and northern towns had suspended owing to a lack of coal, however; but that is all settled now. The Ohio State coal dealers and manufacturers met in annual convention here this week and agreed to "fix things."

The fact that the employees of the Haas Paper Company simply wiped the diamond with a picked team from E. B. Weston's paper house was overlooked by your correspondent last week. The defeated club should solicit points from its proprietor, who is a star base-runner of the "Bachelor-Benedict" combination of the Dayton Club.

The failure of the Miami Valley Boiler Company, of this city, is deplored in industrial circles. That concern turned out regular work for one of the best known paper companies in the United States.

As a matter of news to the paper trade, it should be remarked that the only labor trouble of late years in Dayton is now on through the Malleable Iron Works' strike. It is feared that if the employees win their point, the entire industrial field may be disturbed. No paper manufacturers, or those identified with allied trades, appear to be worried or perturbed.

H. H. Laubauch, president of the Dayton Paper Novelty Company, has returned from an Eastern trip made solely on pleasure. According to the factory scales he gained 8 pounds. He now feels bigger than he did when he was a police director, but it would take a whole ton in avoirdupois to swell Mr. Laubauch's head. He is known throughout the trade as a common sense leader among manufacturers.

There was another political convention in this city the other day, and it is stated on substantial authority that no two men exercised greater prominence than W. E. Crume, of the Crume & Sefton Paper Company, and E. B. Weston. The former's son made his début in matters political.

Judge Giffen has set aside the recent second sale of the M. M. street railroad at Middletown. This is a gigantic property, in which C. F. Gunckel and Paul J. Sorg are interested, or at least once were.

Peter G. Thompson, of the Champion Coated Paper Company, was a generous giver to the building fund of St. Peter's Roman Catholic Church, dedicated this week at Hamilton. The parishioners issued a public card thanking him for his liberality.

Moses Clark, forty-four, married, dropped through two floors at Stillwell & Bierce's this week, and received a concussion of the brain, which rendered him unconscious. He was removed to a hospital, but preferred Christian Science treatment. M. V.

BOSTON.

[FROM OUR REGULAR CORRESPONDENT.]

EASTERN OFFICE PAPER TRADE JOURNAL,
67 FEDERAL STREET,
BOSTON, June 27, 1895.

Trade with local paper jobbing firms continues very good for this time of the year.

While individual orders are not large they are numerous, and the quantity of paper moved from day to day is considerable.

Conditions seem to be so shaping themselves that paper dealers are feeling quite encouraged concerning the fall trade, and it is quite possible that this confidence will ere long be felt by the mills in orders for paper.

Several of the city paper firms take stock this week, and while anticipating this work their stocks have been allowed to drop to as small a showing as possible.

Low water is coming to notice again as a factor to be considered in the figuring of supply and the cost of ground wood pulp.

Wood pulp, therefore, is very firm, at a little advance over quotations of a few weeks ago, with good prospects of yet higher prices.

Advanced prices for sulphite fibre are also among the early probabilities. As those interested in sulphite know, this line of fibre has been selling at a very low figure—too low, in fact, to show any profit.

With the view of devising ways to promote the interests of sulphite fibre manufacturers a meeting was held yesterday in this city.

It is said that seven-eighths of the production of New England and New York were represented at the meeting, and that those present were unanimous in their views as to what should be done to benefit the interests of the trade. Just what was done it is impossible at this writing to state. One of the prominent manufacturers said to me that one object was to have a uniform price for sulphite fibre. Committees were appointed for certain purposes, and to report at the next meeting to be held in this city on Wednesday, July 10.

Paper stock importers report numerous inquiries for stock of different kinds, and while orders booked are not heavy, indications give hope of quite a good business ere many weeks pass away.

Prices on many grades of stock are reported higher abroad, and the market is quite firm, in spite of the fact that importers have been placing very limited orders in foreign markets.

Byron F. Horne, of the J. H. Horne & Sons Company, of Lawrence, Mass., was seen in town to-day. He returned only a few weeks ago from a trip abroad, and during his tour he spent some time in Japan, concerning which country he has some very interesting stories to relate. Mr. Horne stated that the demand for paper mill machinery had very much improved of late and that his company was quite busy in consequence.

Col. E. H. Haskell, accompanied by his daughter, will sail for the other side of the Atlantic this week. He will leave New York on Saturday on the steamer City of Rome, sailing direct for Glasgow, and will be absent six weeks. The colonel says that this is a business trip, to be combined with such pleasures as the tour may develop.

Stanton Day, president of the Moosehead Pulp and Paper Company, of Solon, Me., left for the mill yesterday after a few days' stay in town. Mr. Day stated that the mill is running full time and turning out a big product of ground wood. In March last the ice freshet in the Kennebec carried away a portion of the dam, which caused some little annoyance at the time and expense for repairs; but the work was so well done and so quickly finished that Mr. Day gives much praise to the dam builders, D. E. & Edward Waite, of Holyoke, Mass., who did the job. Mr. Day stated that a coffer dam, 90 feet long, was first built and was completed in eight days, and it turned the whole river. Then the dam, 286 feet long, was built; it has a 28 feet base, is 24 feet high and is filled with stone, and was completed in twenty-one days. In three days more the coffer dam was removed, making thirty-two days' work in all, while the mill was down only eight days.

Among the visiting representatives of the trade reported this week were E. B. Denison, of Portland, Me.; F. P. Carpenter, of Manchester, N. H.; Mr. Bartlett, of Nashua, N. H.; Joseph Philbrick, of North Dighton, Mass.; Mr. Campbell, of Lee, Mass.; James Logan and Mr. Day, of Worcester, Mass.; Elisha Morgan, Edward E. Bill, F. T. Kellogg and C. S. Southworth, of Springfield, Mass.; Hon. William Whiting, Mr. Sturtevant and L. F. Hayward, of Holyoke, Mass.; Charles S. Mayo, of Lawrence, Mass.; A. D. Remington, of Watertown, N. Y.; Major Fred. Ackerman, James Conley, Fred. Bertuch and K. B. Fullerton, of New York.

John M. Carrecabe is removing this week from No. 238 Congress street, where he has been located for nearly three years, to No. 78 High street. This will bring the firm into the centre of the leather district, with which trade Mr. Carrecabe does a large business. He will occupy two floors, 22x150 feet.

The Hollingsworth & Whitney Company has just put up in a new form samples of its "Union Automatic Heavy" and "Union Automatic Bear" paper bags. It is in the form of a folio, the covers being of pulp board, 9½x36 inches in size, with heavy, cloth back; on the inside of the covers are arranged the paper bags of the various sizes held in place by neat bows of colored ribbon, one line of bags on either side, while the fancy trade mark labels of each line of bags are shown beneath the samples. The outside of the covers bears the names of the bags within, with printed price list. The folio is designed to hang upon a hook, as large eyelets are set into the covers near the top, and hooks are furnished with the folios, which are being sent to all dealers handling the Hollingsworth & Whitney Company's paper bags.

The dissolution of copartnership existing between William A. Russell and G. Frank Evans, doing business under the name of the Evans Friction Cone Company, is announced. G. Frank Evans will continue to carry on the business under the same name and at the same place, No. 85 Water street, this city.

Books valued at $901 and paper to the value of $9,355 were exported from Boston during the week ended June 21.

A rain storm set in to-day, which if continued and extended will prove quite beneficial. The agricultural interests of New England as well as the paper making industry are in need of a good, heavy rain.

DELESDERNIER.

HOLYOKE.

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., June 27, 1895.

It is the same old story this week as regards trade. A change for the better is hardly looked for at this season of the year, and manufacturers feel that if they can hold their own during the dull period they are doing very well.

Some mills are comparatively busy, especially those running on specialties, and orders for immediate delivery are being filled.

Some manufacturers always take an inventory twice a year—on the first of January and July. Several have already begun work on this undesirable job and the coming shut-down will enable them to push it.

The mills will all shut down on Saturday night according to schedule, and those who have repairs to do or improvements to push will make the most of the following eight days. It will keep all of the artisans busy during that period.

The contractors for the construction of the new stone dam have nearly finished work on the two big wooden towers, and the stringing of the big cables will now be in order. These cables will be used for transferring material from one side of the river to the other, and they will be operated by means of a large engine located at the foot of the towers. The latter are firmly anchored on each side of the river and will stand an immense pressure.

The cables will be 2,110 feet long and will weigh about 21,100 pounds or 10 pounds to a foot. It is understood that the cables have been tested to 400,000 pounds, but the actual pressure will not exceed 100,000 pounds at first. It is expected that everything will be in readiness to begin the work of transportation by July 10. The stone and other material used on the dam will be brought on two specially constructed spur tracks.

The suit of Edward N. Martineau against the National Blank Book Company for damages resulted in a verdict for the plaintiff, by which he gets $6,000. Martineau sustained injuries in 1894 while repairing a defective Cranston Under-cut paper cutter, which resulted in the loss of his right arm. He brought suit against the company for damages, and the case was tried twice in the Superior Court, the jury disagreeing after each trial. The third trial resulted in Martineau's favor.

Jean Baptiste La Fortune, an employee of Jolly Brothers, machinists and manufacturers of mill machinery, has brought a suit against the firm for $25,000. La Fortune was so badly burned while at work for the defendants, about ten days ago, that he will hardly recover from his injuries.

Hubbard & Taber, the printers and stationers on High street, will remove from their present quarters to Front street, to make room for their new building, which is to be erected at once.

Judge Brothers will begin the erection of their new factory at the east side of the city at once, and they will manufacture paper pads and tablets. H. F. Morrill, formerly with the American Pad and Paper Company, will be general manager of the business.

The Whiting Paper Company contemplates building an addition to its No. 1 Mill finishing room. It will be 120x45 feet and will afford about 25,000 square feet additional floor space.

Front street is fast becoming the centre for job printers and publishers. On this street at present are the Griffith, Axtell & Cady Printing Company, Chapman Printing Company, H. C. Cady Printing Company, the *Free Press* Publishing Company, and Hubbard & Taber will soon locate there.

The creditors of the *Free Press* Publishing Company recently closed the office for a few days, but the difficulty was adjusted and the paper is being issued as usual.

The Franklin Paper Company reports as follows regarding its condition: Fixed capital, $60,000; capital paid in, $60,000. Assets—Real estate, land, water power, buildings and machinery, $100,000; cash and debts receivable, $37,117; manufactures and merchandise, $32,834; total, $169,952. Liabilities—Capital stock, $60 000; debts, $90,123; profit and loss, $19,828; total, $169,952. The Holyoke Envelope Company stands thus: Fixed capital, $30,000; capital paid in, $30,000. Assets—Land and buildings, $55,000; machinery, $50,000; cash and debts receivable, $74,599; manufactures and merchandise, $40,386; total, $219,986. Liabilities—Capital stock, $90,000; debts, $177,399; profit and loss, $1,455; reserve for depreciation, $11,131; total, $219,986.

Fred H. Cook, a pressman employed by the *Transcript* Publishing Company, had the misfortune to have one hand caught in the press recently, and he was obliged to have three fingers amputated.

Joseph Rhibault employed by the Fairfield Paper Company at Fairfield, had one of his hands caught by a calender roll a day or two ago and it was badly crushed. It was found necessary to amputate every finger except the forefinger and thumb.

E. C. Rogers, president of the Massasoit Paper Company, with his wife and daughter, sailed for Germany on Saturday last. They will devote two months to European travel.

Earl McKee, traveling salesman for the Hampden Glazed Paper Company, and Mary G. Fowler were married yesterday.

John C. Newton and family have gone to their summer home at Wilmington, Vt., for the season.

The Water Power Company found it necessary to restrict the manufacturers to the use of 50 per cent. of the surplus water during the past week. H.

GREAT BRITAIN.

[FROM OUR REGULAR CORRESPONDENT.]

LONDON OFFICE PAPER TRADE JOURNAL,
1 MITRE COURT, FLEET ST., E. C.,
LONDON, England, June 13, 1895.

A clever man is W. K. Trotman, paper makers' engineer, with a specialty in dandy rolls. He has two patents, and to work them floated a company in 1893 with the modest capital of $10,000. This company now proposes to form a company with the by no means modest capital of $437,500, of which stock to the value of $325,000 is generously offered to the public, which ought to be impressed with the name of the undertaking—the Papermakers' Engineers and Prize Medal Dandy Roll Patents Company, Limited. Mr. Trotman's great invention is a dandy roll which allows the watermark to be removed and replaced by another. Thus, instead of having a dandy

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PULP & PAPER MACHINERY
— Sole agents for the SALOMON-BRÜNCCER SULPHITE PATENTS.
WELDED DIGESTERS furnished only by THE PUSEY & JONES COMPANY, —
— CORRESPONDENCE SOLICITED — — WILMINGTON, DELAWARE.—

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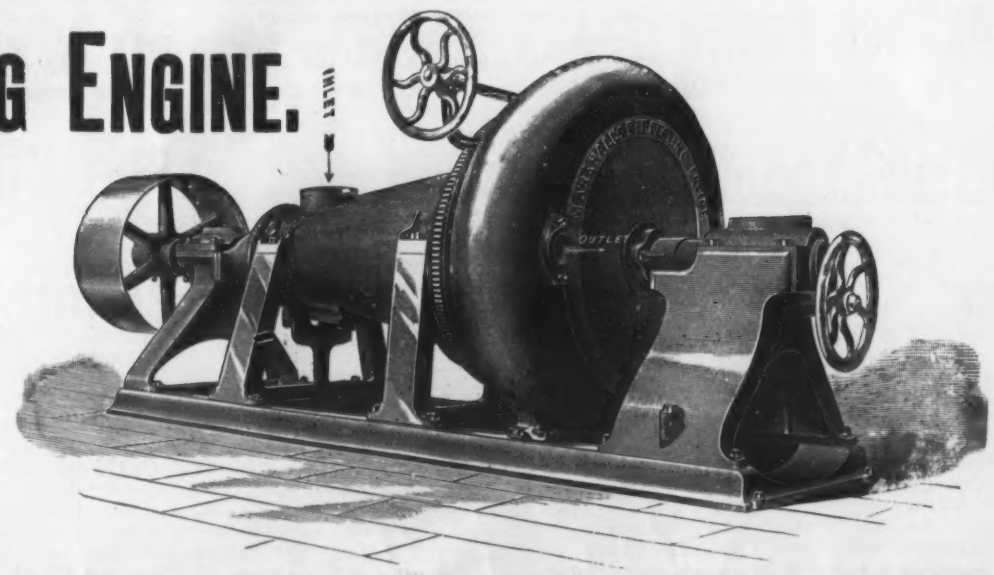

USED ON ALL CLASSES OF STOCK
AND EVERY QUALITY OF PAPER.

This Engine will produce a **better finished, stronger** and **more even** sheet of paper from the same materials than can be produced by any other mechanical process, and at the same time will greatly **REDUCE** the **TIME** and **POWER** required for Beating.

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ON ALL YOUR MACHINES AND IMPROVE THE FINISH QUALITY OF YOUR NEWS, BOOK AND MANILLA.

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76,125,000 GALLONS OF WATER A DAY

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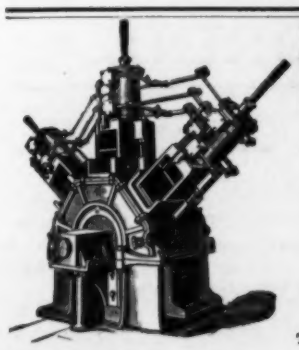

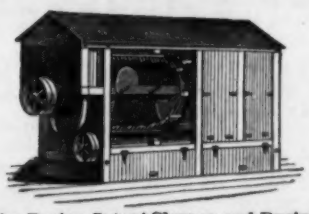

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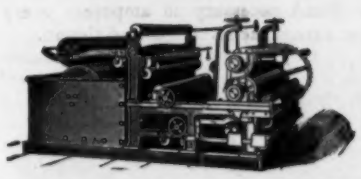

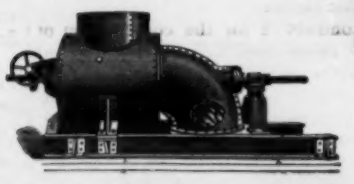

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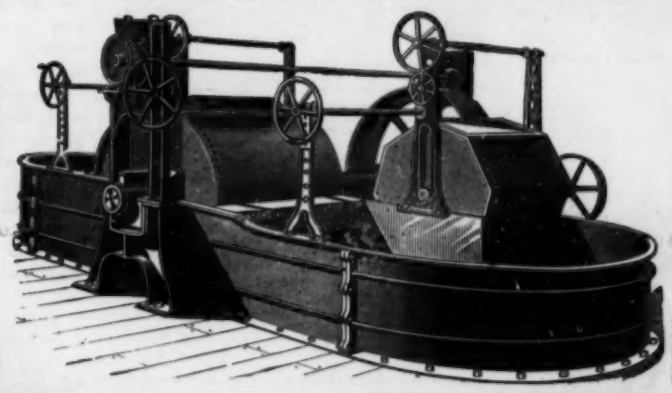

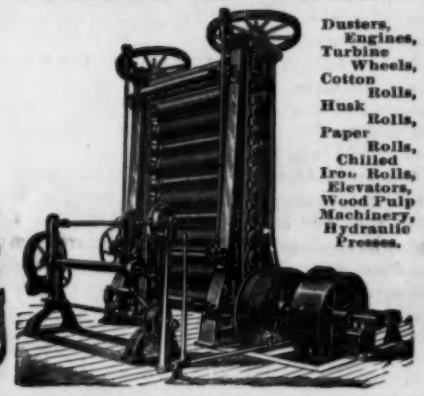

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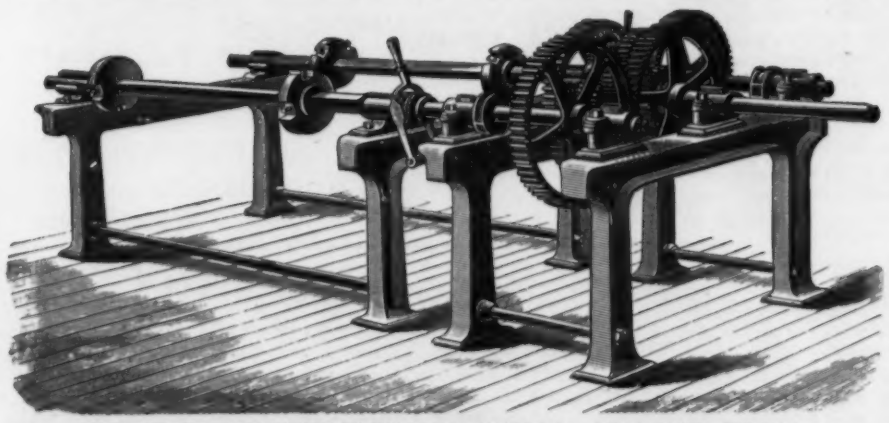

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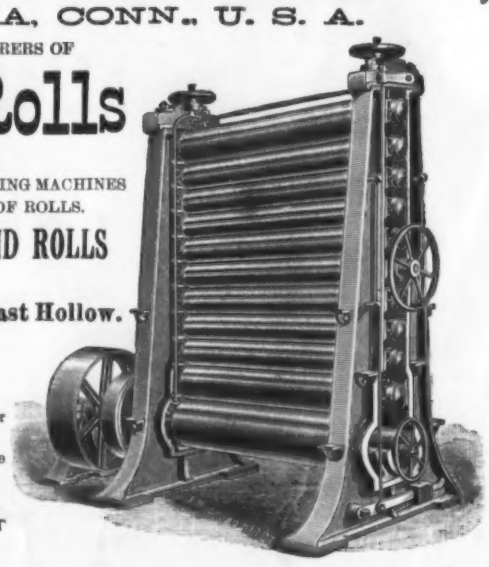

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INTRODUCTION.

General Laws of Chemistry: Principles of Chemical Physics; Chemical Arithmetic.

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General Chemistry.—With a short account of each element and its principal compounds; source, manufacture and properties of such compounds as are used in paper making.

PART II.

CHAPTER I.—**Cellulose.** Its chemical and physical properties, chemical relations and reactions.

CHAPTER II.—**Fibres.** Cellulose in its relations to the plant; the vegetable cell; the cell wall; changes which occur in the cell wall; lignin or incrusting matter; its chemical properties; characteristic markings of the cell wall in different fibres; characteristic cells other than fibres in different pulps. Classification of fibres: 1. Seed hairs; cotton, chemical and physical character of fibre, dimensions, analyses. 2. Bast fibres, as linen, jute, hemp, manilla, rhea, ramie, agave, sisal, adansonia, &c.; occurrence in plant, separation of filaments; character, size, distinguishing features of filaments and ultimate fibres, analyses and chemical properties. 3. Fibres and other cells from whole stems and leaves, as straw, esparto, bamboo; measurements and characteristics of fibres, yields, analyses; characteristic cells found with fibres. 4. Wood fibres; growth of wood; cambium layer; spring and autumn wood; sap and heart wood; resins; bark and knots; analyses of woods; specific gravities; ash; fuel values; occurrence and character of all woods used for pulp making.

CHAPTER III.—**Processes for Isolating Cellulose.** Rag boiling; special treatments for various fibres, as jute, straw, esparto; review of miscellaneous processes for treating wood; the water process, aqua regia, &c.; the soda process, history; preparation of liquors, boiling, washing, recovery, sources of loss; analyses of chemicals and liquors; the sulphite process, history; general principles; the different systems; liquor apparatus; preparation and analyses of liquors; digesters; linings; boiling; subsequent treatment of pulp; waste liquors; recovery. The sulphide and sulphate processes.

CHAPTER IV.—**Bleaching.** General principles; bleaching agents; bleaching powder; deterioration; analyses; preparation of bleach liquors; use in chests, engines, drainers; hot bleaching; acid bleaching; use of alum; chlorination and oxidation of fibre; washing stock, antichlors; loss in bleaching; ozone bleach; hydrogen peroxide; permanganate; sulphurous acid; special processes for various fibres.

CHAPTER V.—**Sizing and Loading.** Resin; preparation of size; free alkali; free rosin; alum; analyses of alums; free acid; basic alums; sizing power; resinate of alumina; moss; casein; wax; starch; animal sizing; preparation and use; drying; loading; analyses of clays, agalite, pearl hardening, &c.; use; retention; ash; combined water; effect of alum and starch.

CHAPTER VI.—**Coloring.** Mineral colors; vegetable and animal colors; aniline colors; chemical properties; effect of alum and traces of bleach or alkali in different colors; distinguishing tests; effect of different waters.

CHAPTER VII.—**Water and Water Supply.** Character and analyses of different waters; ground waters; surface waters; river water; artesian well water; hard and soft waters; boiler scale; effect of waters on size and colors; various systems of filtration; use of alum; softening water; self purification of streams; natural filtration; effect of storage; vegetation in ponds; crenothrix; consumption of bleach by waters.

CHAPTER VIII.—**Chemical Analysis.** Description of apparatus and methods for testing the purity and strength of all paper making chemicals, colors, &c.; common impurities and adulterants given; full description of methods of analysis for sulphite and soda liquors, bleach solution, alums, &c.

CHAPTER IX.—**Paper Testing.** Full account of the latest German methods for testing and classifying papers; determination of ash; kind of sizing; amount of sizing; free acid and chlorides; strength; proportion of ground wood; kind and condition of fibres.

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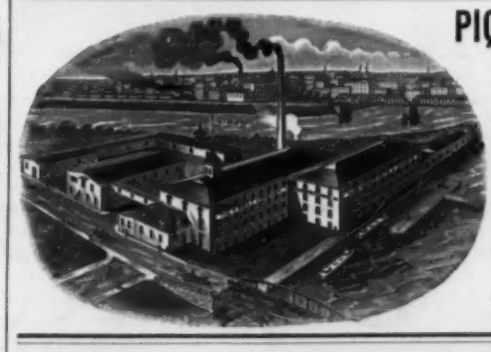

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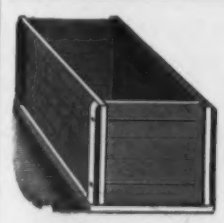

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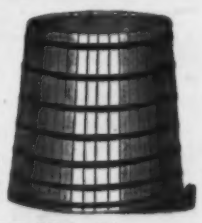

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roll for each watermark the paper maker would simply need one for each width of machine. It seems to be a good idea, but perhaps, like a lot of other good ideas, it is more beautiful in theory than in practice. However that may be the trade do not seem to have risen in their thousands to ask for it and see that they get it. It has been on the market a year or two and yet the promoters do not seem to be able to name any prominent makers using it. The other patent is an anti-froth contrivance, also in the dandy roll line, and the paper makers seem to be quite calm over this also; yet the vendors ask the modest sum of $225,000 for two at least comparatively untried contrivances.

The first paper mill to introduce an eight hours' day is—where do you think? In Russia! The paper factory of Dobruscha, near Gommeln, is the first establishment of this kind which has introduced the eight-hour workday. Mr. Stultschinski, the manager of the factory, has published a pamphlet, in which he states that the system of shorter hours is a success. He says that his employees look much better and healthier to-day than they did five months ago, before the eight-hour system was introduced. Formerly employees worked twelve hours.

In many English homes there is a picture of an heroic lady kneeling over a wounded soldier in the courtyard of a besieged house. "The Heroine of Manipur" was Mrs. Grimwood, the widow of the political agent of Manipur, who was killed in the rising of the natives in 1891. Mrs. Grimwood was herself at the residency when her husband went into the fort with several officers to negotiate with the besiegers. They were there killed and the attack on the residency was resumed. The courage and humanity displayed by Mrs. Grimwood during the assault and on the march across the country to meet the rescuing party has made her name honored throughout the empire. This lady married Andrew Cornwall Miller, paper maker, of Carshalton, Surrey, on the 4th inst. Mr. Miller's paper mill is one of the oldest in the kingdom. C. Ansell, the first proprietor, flourished in the seventeenth century, and the Ansell family held the mill for long years. It then came into the possession of J. Muggeridge, who left it to his son, Commander C. J. Muggeridge, of Her Majesty's ship Thunderer, who was a fish out of water until he sold it to Mr. Miller. This gentleman is yet quite a young man. He was educated at Charterhouse and Cambridge. At the university he was a great friend of Frederick Ford (mill 428, blottings), who, I believe, induced him to go into the paper trade. The Carshalton mill is wonderfully pretty, and is entirely on hand-made papers. It is said that several of the descendents of the men who worked for the first Ansell are yet employed at the mill.

When and in what country was wood pulp first made? A writer who ought to have known better seemed to gasp with surprise at the idea that a patent was taken out about the year 1800 for making paper from wood, and when it was pointed out to him that Matthias Koops' book was actually printed on wood paper in the year 1801, he tried to qualify his original remarks by questioning the commercial success of Koops' undertaking. As a matter of fact Koops seemed to be satisfied with proof that he could make a paper fit to be printed on from wood or from straw alone; but at his Bermondsey mill he worked an invention of his own for extracting ink from used papers and working this up into fresh material. He was certainly in the King's Bench prison for debt at one time, but Mr. Stonhill, who knew personal friends of the ingenious old paper maker, told me that this had nothing to do with his success as a paper maker, but that old Matthias Koops in his latter days had got into the hands of a gang of swindlers.

Anyway, Matthias was by no means the first to make paper from wood. There is a mill now on the Ship Canal at Partington, owned by D. & S. Ockleston, and which was founded in 1756 by Thomas Greaves. In 1787 the Society for the Promotion of Arts and Commerce gave this gentleman a silver medal for the excellent quality of his "paper from raw vegetable," and what this raw vegetable was is explained in a letter written by Mr. Greaves to Mr. Moore on December 22, 1787. Possibly even this is not the first time that wood paper was made; but it seems to be the first record of it. Here is the letter:

"Sir—I received your two letters, which should have been sooner replied to had I not been from home and particularly engaged. The process used in the making of paper sent you from the bark or peel of within twigs was to have stripped it from the twig in the month of September, when the twigs are usually cut for the making of white baskets. I then provided about 6 cwt., of which I ordered about two-thirds to be hackled, much in the manner of dressing flax or hemp; then dried in the sun, which gave it something of the appearance of brown hemp. In this state it was reduced to about 1 cwt., but being attended with a good deal of trouble, and so much reduced, I dried the remaining 2 cwt., and with the leaves in its green state as it was stripped from the twig, and that was reduced about one-half. Having prepared the stuff chest and vat quite clean I chopped the clean bark, or first preparation, and with the roller and plate quite dull and smooth as possible I set the engine to work, and from it was produced the paper of which you had eight quires sent, being the finer sort; and from the other half was produced the coarser sort, of which you had the twenty-four half quires. From these materials I made little more than two reams in the whole; but had I not hackled and cleaned the larger part I expect that I could have made upward of ten reams from them. Northing was used but the mere bark or peel of the twigs, without any oakum, hemp or other preparation. And as I considered that the experiment you wished would then be made, I was not mindful of the quantity being more; but the next season, if it is desired, I can readily make any additional quantity, though at what price it may be sold, or to what use it may be best applicable, I cannot say, but think it may be sold at about one-half the expense of other paper that is produced from ropes or rags."

Just by way of a change a full cargo, about 1,100 tons, of esparto grass has been delivered at the Manchester Docks. This was imported by Messrs. Wrigley, of Bury, and is the first cargo of grass which has sailed up the ship canal. It is a refreshing change after that crowd of wood pulp.

In boiling esparto and other paper making fibres it is usual to utilize spent cooling waters and wash waters in making up succeeding hot washes or diluting strong lyes; but for this purpose these spent liquors are temporarily conveyed to a receiver, where much waste of heat occurs. In ordinary processes also it is usual to utilize the blow-off steam from the high pressure boilings, but to keep up or raise the temperature of liquors in outside receivers. J. P. Cornett, now patents an improved process, in which he arranges a battery of boilers so connected with each other that with the aid of pumps all cooling waters can be conveyed over to the next succeeding boiler in the series to become hot washes, and thence into the next boiler and so on in a continuous manner. Each boiler is filled successively with the same quantity of fibre, and therefore naturally requires the same boiling and subsequent hot washing and cooling consecutively until emptied and again filled. The number of boilers required is of course governed by the amount of the material to be treated per day or week and the number of hot washings and coolings desired. At the same time as the cooling and washing waters are being passed forward in the process to meet the newly boiled, unwashed fibrous material to cleanse it of all soda and soluble impurities, the blow-off steam from the boilers working under high pressure is conveyed direct into the boilers which are hot washing and into the boiler which is being filled with raw material. This is effected by having the blow-off pipe of every boiler connected to one common exhaust main, and having this main again connected to each boiler just below the high pressure steam inlet valve, whereby the high pressure boilers can be made to convey their blow-off steam to the washing boilers. Let us take the case where the series consists of seven boilers. Suppose one boiler of the range to be empty, it will be charged with its proper proportion of fresh caustic lye and say 3 tons of esparto, and with the fresh lye there may economically be added a measured quantity of spent lye from a previous hot washing. The boiler will then be closed and steam at, say, 45 pounds pressure will be introduced to boil the mass. During boiling, in order to induce a vomit or circulation of liquor, some steam will be allowed to blow off into the exhaust main, and after boiling the requisite time the whole of the steam will be blown off into the same main. When the pressure is sufficiently reduced the spent lye will be run off to the soda recovery department. The lid will have now been moved from the boiler, which will have pumped into it at its upper lid its first hot wash from a preceding boiler, and simultaneously it will have injected into it, by an auxiliary pipe connected with the main exhaust pipe, low pressure steam, which will have come direct from the high pressure boilers blowing off into the main exhaust pipe. The first hot wash will thus be boiled in the boilers by low pressure steam, and after a certain time part of the lye in the boiler will, as before, be run off to the soda recovery department, the remainder being pumped to a succeeding boiler to dilute the fresh strong caustic liquor. The boiler will now have pumped into it at its upper lid a second hot wash, which will consist of all of the hot wash from a preceding boiler, and this will now be boiled by low pressure steam from the exhaust main, as just described. The second hot wash will now be pumped on to a succeeding boiler, and a cooling water will be introduced from a preceding boiler, and be allowed to steep without circulation. After this soaking is over the first cooling water will be pumped off to a succeeding boiler. The grass will now receive its second cooling water from a preceding boiler, and this will be actuated by a circulating pump, which will draw off the charge from the boiler bottom and deliver it again into the top of the same boiler, and after this circulation has progressed a sufficient time it will be stopped, and the resulting liquor will be pumped off to a succeeding boiler. Now the third and final cooling charge, consisting of cold, fresh water from a water main, will be run into the boiler to further cool the fibre, and this again will be circulated within the boiler, as just described above. This third cooling charge will then be pumped off to a succeeding boiler, when the esparto in the boiler, whose treatment has been described, will be ready for emptying and further treatment by breaking in the well-known manner. It will thus be seen that each charge of grass or fibre receives in each boiler two hot washings and three cold washings after the ordinary boiling under high pressure steam.

Lord Lilford's proposal to make artificial feathers of paper for millinery purposes seems to have been carried out on the Italian stage long enough ago. In those cheaper theatres of the Peninsula the tissue paper feather waves from every cap and helmet in the most diverting manner. Manrico and Luna compete in length of plume as they vie in power of lung, and an English tourist says: "I once saw at the Nazionale, in Florence, the feather of a diminutive tenore robusto touch the calves of his stout little legs." ALFA.

Duties and Liabilities of Telegraph Companies.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

There are few merchants nowadays who do not resort, occasionally at least, to telegraphic communication either with their agents, their customers or their attorneys. Fluctuations in the markets require that the first shall be kept advised, so that their orders may be at present rates; prompt action must sometimes be had both in the acceptance of orders or in the rescission of contracts fraudulently induced; and attorneys must frequently be notified to bring attachment or other speedy action, that debts may not be lost. Out of these, through delays in delivery, mistakes in transmission, &c., arise claims for damages against the telegraph companies. There are therefore given below some of the rules which have obtained and decisions which have been made in this regard, confining our attention to commercial messages and omitting those of a personal nature, such as claims for damages in not receiving the messages regarding sickness of relatives, &c.

Messages are generally written upon the printed blanks of the company, which contain conditions, rules, &c., under which they will be transmitted. Such conditions must not be against public policy, at least in those States where such companies are held to be "common carriers," where a contract exempting the company from liability beyond the sum paid for transmission, unless the message is repeated, is void, as it would relieve it from want of proper care and diligence; hence, in case of mistake, the burden is upon the company to show that there was no want of care and diligence. Many States have enacted laws upon this subject, in consequence of which their courts have declared certain conditions upon the blank to be void; but the United States Circuit Court held that a telegraph company is protected by the conditions upon the blank used by the sender from liability for any error or mistake in conveying the message, unless it is proved that it resulted from gross negligence of the company.

The fact that a message was written upon an ordinary piece of paper instead of on a telegraph blank did not, in the case of the Western Union Telegraph Company *v.* Jones, relieve it of its obligation to transmit, nor will it be relieved where the agent, without the sender's knowledge or consent, attached it to such blank, and evidence is not admissible to show a regulation of the company requiring all messages presented it to be attached to one of its printed blanks, since the agents of the company may bind it without imposing the conditions contained in the special contracts on its blanks. Of course, when attached with knowledge and consent it becomes a part of the message, and, so far as legal, the conditions are binding.

A telegraph company has the right to establish business hours and refuse to accept messages for points not having night offices for delivery outside of such hours; but where the message is received by the agent for prompt delivery, and the sender is not informed that there will be delay, the company is liable. So where its agent accepts for delivery outside of its free delivery district, without collection of additional expense, the company will be held in damages for the neglect of its agents in not delivering the same at such points.

The company is chargeable with notice of the relation which exists, if any, between all parties named in the message, and with notice of such purposes as may be reasonably inferred from the language used in connection with the subject matter, taking into consideration the usual manner of expressing messages sent by such means, brevity, &c. The party damaged has the right of action, whether he be the sender, the addressee or the one for whose benefit it is transmitted, and this latter must appear from the message, or in the directions given to the agent at the time it is sent. Where a telegram does not show that it concerns the business of the addressee's employer, further than that it is addressed in the latter's care, the right of action for damages is in the addressee and not in the employer.

When a telegraph message, read in the light of well-known usage in commercial correspondence, reasonably informs the operator that the message is one of business importance, and discloses the transaction so far as is necessary to accomplish the purpose for which it is sent, the company is liable for all direct damages from negligent failure to transmit or deliver it, as written, within a reasonable time.

The damages which may be recovered can be judged from the case of Hollis *v.* the Western Union Telegraph Company (18 S. E. Rep., 287), where the court held that the measure of damages which may be recovered from such company for deviating from the terms of a message correctly reporting the state of the market for a particular article, which induced the receiver to send the article forward for sale, is the difference between the actual state of the market and the terms of the message, as erroneously transmitted, overstating it, provided the actual loss amounts to that much. And from the case of Baldwin *v.* the Western Union Telegraph Company (21 S. E. Rep., 212), where a message accepting employment was delivered to the company and it failed to transmit and deliver the same, the court held the company liable to the sender for such damages as he actually sustained.

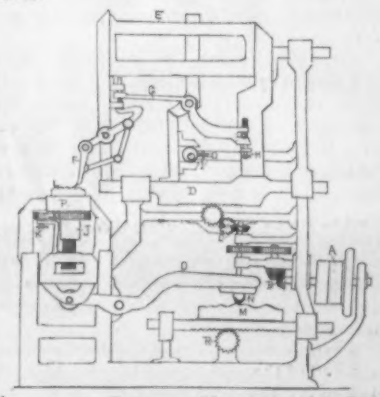
New Inventions—LXXXIII.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

BY GEO. DAMON RICE.

The demand for artistic decorations for use in ornamenting the walls and ceilings of modern residences, offices, railroad stations, stores and halls has developed largely in recent years, until at the present time engineers who prepare the plans for buildings find it necessary to make provision for these ornamental effects, and metal skeletons are provided for both ceiling and side wall work, and to these skeletons the variously carved, molded or otherwise prepared decorations are fixed. Plaster of paris has long been a familiar material for this sort of ornamentation, and from it designs of an elaborate nature have been made in representation of figure work, intricate foliage and all sorts of complications, resulting in pleasing effects. The molding of the plaster is accomplished in wax casts, and the work is in most cases attached to the walls when the cast is completed; in other cases the figures are modeled in place according to the desires of the architects or decorators. Although an effective and striking decoration is obtained from plaster of paris, the operation is costly, the material is weighty, liable to warp, break off in pieces, crumple, and in other ways become defective. Only skilled artisans are trusted with the preparation of the casts and placing the same. Skill costs money. For these reasons, and because wood pulp has proved available for many like purposes with success and because paper mill mechanics desire to open every possible field for consumption of this practical fibre, attempts have been made to manufacture these beautiful wall ornaments from wood pulp. The figures are not cast, but are carved from solid blocks of compressed wood pulp, and the carving is all done automatically, for there is no grain in the blocks thus prepared to turn a carving instrument from its course, and the mechanical cutting instrument has an easy substance to shape out.

In producing this new form of substitute for plaster of paris ground wood pulp of ordinary grade is beaten in an engine to get an even consistency. At this period a liquid gesso, composed of whiting previously soaked in water and mixed with linseed oil and rosin, is added. Soft soap and white wax are also put in. The pulp is given another beating, then injected into molds of the proper shape for making convenient blocks, pressed, dried by hot evaporation, treated to a bath of warm raw linseed oil and rosin at a temperature of about 100° Fahr., baked in an oven at 220° Fahr., then subjected to another bath of the raw linseed oil and rosin, followed by another baking, when the block is ready for the final operation prior to carving, which consists in soaking in soft soap forty-eight hours, for the purpose of rendering the fibre soft and pliable to the action of the carving tool. The carving machine is quite an elaborate affair, as may be judged by the accompanying view, but it is not complicated, considering the intricate work which its mechanism does.



AUTOMATIC CARVING MACHINE FOR COMPRESSED WOOD PULP.

There has already been introduced a practical means by which wood can be carved mechanically, but on a somewhat different principle from that employed in this device. The diagram shown here is a partly sectional sketch representing one cutting tool, whereas in practice a series of tools cut simultaneously and from the same pattern. The machine frame is shown as provided with a driving pulley and shaft, A, these giving motion to the beveled gears B, which in turn impart the movements necessary to operate the connection at C, where there are gears for moving the tool frame D. The top of the tool frame is marked E, and the tool itself is shown at F. A peculiar link arrangement of bars forms the means for sustaining the cutting tool in the right position for operating on the block of plup L. Different bevels of the point of the cutter are obtained by an adjustment of the screw H, which operates on the lever G; also the turning one way or the other of the set screw at I alters the conditions of the cutter. The pattern for governing the depth of cut is situated at M and is moved forward and backward at the same time with the like movement of the tool frame. This motion is acquired through the action of the gear R on the toothed table which supports the pattern M. A lever, O, is furnished with a guide or tracer, N, and follows closely the curves, indentures, risings and shapes of the pattern, communicating them to the block table P, through the agency of the lever O. A manipulation of the guide wheel K alters the threaded stud J, and by this the height of the table P is gauged. The carving is done in sectional shavings. The wood pulp is pretty much in the condition of clay or putty when on the table and can be readily carved without danger of splintering, as in the case of wood. Each trip of the cutter across the block removes a shaving about a sixteenth of an inch wide, and as deep as is needed to form the complete figure. The cutting tool simply travels back and forth at the same level The pattern M raises the block L up and down as desired to conform with the design, and so that the cutting tool can cut deeply or only a little, as necessary. The action is quite rapid. A block is soon carved and can be quickly removed to be substituted by another.

The finishing processes consist of drying the carved designs for a week or two, then polishing with a soft rag and French chalk, or staining in imitation of various woods. Bronzing is resorted to. Colored coatings of Indian red, yellow ochre and manganese black are employed. The finished effects are light, cheap, close imitations of natural hand carved woods, rendered fireproof if necessary, easily attached to walls and having the needed elements for the purpose intended.

When you shut down for the purpose of inspecting and cleaning your boiler, take the precaution to cool it off gradually, as haste along this line may do much damage.

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Machine for Coating Paper.

Illustrations of a new machine for coating paper are herewith given, the object being to make an equal and even coating over the entire surface of the paper, and at the same time to prevent streaking or the formation of air bubbles in such coating.

Figure 1 is an end elevation of the machine, its lower part being broken away and the emulsion feeding device shown in section. Fig. 2 is a side elevation of the upper part of the machine. Fig. 3 is a sectional view taken on the irregular line 3 3 of Fig. 1. Fig. 4 is an enlarged longitudinal section of one end of the dipping pan and the feeding device.

5 is the framework of the machine, and 6 the revolving cylinder, which is similar to those used on cylinder printing presses, the surface of the cylinder inside of its rims being divided into two parts, over each of which, if desired, tympan sheets, 7, may be spread, but in the drawings only one-half of the cylinder is thus utilized. The outer tympan sheet or covering is preferably of some waterproof or glazed material, held in place in the ordinary way, and the sheet to be coated is held in place on the tympan by the usual grippers 8.

9 represents the lifting fingers for raising the end of the sheet from the cylinder just before it leaves such cylinder.

10 represents gear teeth formed on the periphery of the cylinder rim on one side, and these teeth mesh with the teeth of the small gear 11 carried on the short shaft 12, having bearings in the framework 5, and a bracket, 13, on that side of the machine.

14 is a drive-wheel or pulley mounted on the shaft 12 and is driven by the belt 15, connected with any suitable source of power.

16 is the feed table, which has a hinged extension, 17, whose outer end rests on arms, 18, secured to the rock shaft 19, which is rocked or turned through the arm 20 connected with the shaft 19, the end of the arm 20 being moved at the proper time by contacting with a lug or projection, 21, on the end of the cylinder as it revolves. Paper guides, 22, are also secured on the shaft 19, and the object of the hinged table extension is to allow such extension to be raised, thereby lifting the sheet being fed to the cylinder above the guides 22, so as to be readily caught by the grippers.

23 is a small gear wheel mounted on a shaft, 24, having bearings in the framework 5 of the machine, the gear 23 meshing with the teeth 10 on the cylinder rim.

25 is a counter shaft also having bearings in the framework 5, and has a small gear, 26, mounted thereon, which meshes with and is driven by the gear 23 on the shaft 24.

27 are wheels mounted at proper distances apart on the counter shaft 25, and over which tapes or bands are carried for conveying the sheets from the cylinder.

28 are finger bars fixed on a rod, 29, between wheels, 27, and the cylinder, and as such cylinder revolves and the coated sheet about reaches the fingers 28, the grippers 8 release their hold on the sheet, and the fingers 9 lift the edge of the sheet above the ends of the fingers 28, so that the sheet will be carried over such fingers to the tape carriers to be conveyed to any desired point for drying.

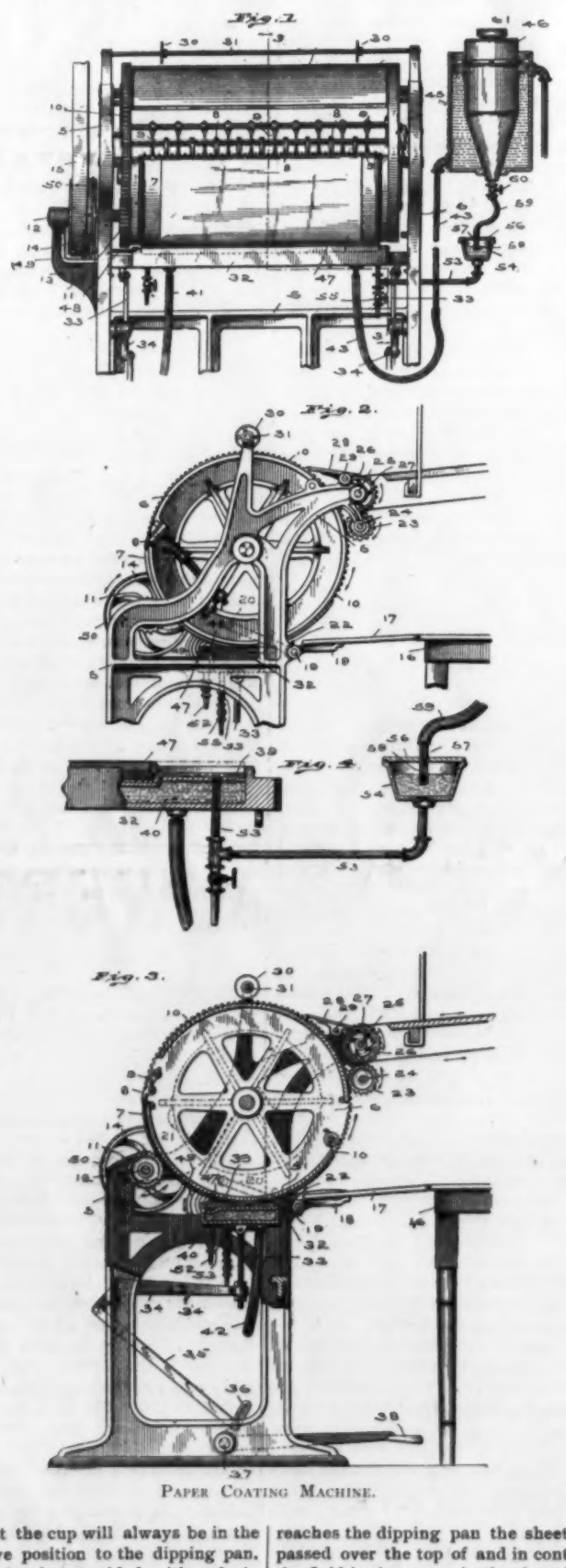
30 are disks mounted on a loose shaft or rod, 31, above the top of the cylinder, the disks having serrated edges and bearing on the edges of the paper or sheets after they are coated and while they are being carried around on the cylinder.

32 is the dipping pan or trough, which has guides on its ends which work in grooves in the framework 5, immediately beneath the cylinder, and is adapted to be raised or lowered with relation to the cylinder, it having pivotally connected to its under side at each end a vertical rod, 33, whose lower end is adjustably connected to the lever 34 pivoted to the framework 5, the opposite ends of each of the levers being connected by a link, 35, with a crank, 36, on a rock shaft, 37, operated by a treadle, 38.

The dipping pan or trough is formed preferably in two parts, an upper open dipping pan, 39 which, is adapted to hold a quantity of coating fluid, and a chamber, 40, below, through which is passed hot water or steam for keeping the fluid warm when necessary, the water or steam entering the chamber 40 through the flexible pipe 41, and leaving it through the flexible pipe 42, which is connected by the pipe 43 with the tank 45, located at any suitable point near the machine, and in which is suitably supported the supply can or tank 46 for holding the supply coating fluid which keeps the pan filled as hereinafter described. One side of the dipping pan is circularly recessed for the reception of a roller, 47, which has bearings in the end walls of the pan or trough, and whose central rod or shaft, 48, extends to the outside of the machine frame, where it has mounted on it a cone or speed pulley, 49, connected by a belt or band, 50, with the drive wheel or pulley, 14.

51 is a narrow brush which is secured lengthwise of the dipping pan on its front side, and when the dipping pan is in its raised position the brush is adapted to bear against the tympan sheet and smooth down the paper to be coated.

52 is the drain for the dipping pan, and 53 is the supply pipe, which is connected to the under side of a small basin or cup, 54, outside of the machine frame, the connection of the cup to the dipping pan being



PAPER COATING MACHINE.

rigid so that the cup will always be in the same relative position to the dipping pan. The pipe 53 is also provided with a drain valve, 55, for emptying such pipe and the cup 54, and when necessary, the tank 45.

Across the open top of the cup 54 is a fixed cross piece or plate, 56, in which is secured a short pipe, 57, which extends about half the depth of the cup, and has cut in its lower end a notch, 58, in the shape of a narrow, inverted V, the top of this notch being on a line with the desired level of the emulsion in the dipping pan. The short pipe 57 screwing through the plate 56 can be so adjusted as to secure any desired depth of emulsion in such dipping pan. The short pipe 57 is connected to the lower end of the supply tank 46 by a flexible pipe or hose, 59, and just below a valve, 60.

The tank 46 is closed air tight by a screw cap, 61, after it is filled with emulsion, and so when the valve 60 is opened the emulsion will flow out of the tank as fast as air can pass up through the body of fluid through the pipe 57 and flexible pipe 59, so that when the coating fluid has filled the dipping pan through the pipe 53, and the cup 54 and dipping pan are filled up to a level with the top of the V shaped notch 58, the flow of fluid from the tank 46 will cease.

When a sheet or sheets is to be coated the machine is started, and the roller, which is then partly immersed in the fluid, will be revolved and will take on a coating; and when a sheet has been fed to the cylinder from the feed table 16, upon the treadle 38 being depressed the dipping pan will be raised, so that when the part of the cylinder which has the tympan sheets on it, and on which the paper or sheet to be coated lies, reaches the dipping pan the sheet will be passed over the top of and in contact with the fluid in the pan. As the sheet is coated by coming in contact with the fluid the roller 47 is still revolving, and when the sheet reaches it the roller makes contact with said sheet, rolling over it, and thus adds, takes away or regulates the coating to any desired thickness over the surface of the sheets, removing any air, bubbles or other blemishes in the coating. The sheet will, after it has been entirely coated, be carried around by the cylinder until it reaches the discharge point, when the grippers will release their hold thereon and the fingers 9 lifting the sheet over the ends of the finger bars or guides 28, the paper will be carried on to the tape conveyor or carrier, which removes the paper to any desired point for drying.

It is very evident that the fluid in the dipping pan must always be kept at the same level, and this is accomplished through the fluid in the cup, which closes the end of the short pipe 57. When the fluid gets below its ordinary level in the dipping pan, the same will be the case in the cup, and the falling of the fluid level in such cup will open or expose the upper or smaller end of the V-shaped notch in the end of the pipe 57, allowing a very small amount of air to enter the pipe, this causing such an amount of fluid to escape from the pipe as will bring the fluid back to its usual level in the dipping pan 39 and cup 54, thus closing again the notch 58 until the level of the fluid in the dipping pan is again lowered, as before stated. It will thus be seen that the fluid is always kept at the proper level in the dipping pan, and no matter how little or how much is used from such pan, the level of the fluid is immediately brought back to its normal level.

Any desired thickness of coat can be put on the paper or sheets, and this may be accomplished by increasing the speed of the roller through its speed pulley, or by increasing or decreasing the upward movement of the dipping pan so that the pressure of the roller on the paper will be more or less.

It is usually cheaper to break a cast iron ell, where it is necessary to take down a line of pipe, than to try to cut the pipe (if the space is limited) or to take down several extra lengths in order to reach a union or a right and left coupling.

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IMPORTS AT NEW YORK.

FOR THE WEEK ENDED JUNE 21, 1895.

An. Colors..	748	$42,326	Paper	964	$37,235
Alum	—	—	Steel Pens..	11	6,473
Alum's Cake	—	—	Stationery .	21	1,435
Bl. Powders	320	4,700	SlatePencils	100	599
Soda Ash...	3,618	13,844	Clay	—	7,411
Soda, Caus.	220	2,465	J'te B'ts,&c.	—	—
Soda, Sal....	560	1,216	P.Hangings	99	3,488
Soda, Hypo.	76	—	Pap'r Stock	2,837	22,379
Ultramarine	308	3,234	TerraAlba.	382	770
Books.....	232	30,639	Waste.....	34	1,898
Newspapers	231	7,341	Wood Pulp	130	610
Engravings.	129	19,455			
Ink.....	381	2,148			
Lead Pencils	5	341	Totals...	11,170	210,027

Imports General Merchandise for the week ended June 21, 1895..... $7,609,561

IMPORTS OF PAPER STOCK AT NEW YORK.

FROM JANUARY 1 TO JUNE 26, 1895.

Whence Imported.	*Rags.*	*Old Papers.*	*Chemical Fibre.*	*Ground Wood.*	*Manilla Stock.*
	Bales.	Bales.	Tons.	Tons.	Bales.
Alexandria...	685	....	....	....	....
Antwerp.....	2,852	5	834	....	11,306
Bordeaux.....	503	....	....	....	850
Bremen.....	2,552	725	2	....	2,668
Bristol.....	....	...	....	....	2,296
Buenos Ayres.	590	....	....	....	....
Calcutta.....	....	...	....	....	5,471
Cen. America.	180	....	....	....	....
Christiania....	....	....	85	....	....
Copenhagen..	...	....	105	....	1,435
Dundee.....	....	....	1	....	613
Fiume.....	....	....	34	....	....
Geestemunde.	412	....	....	....	537
Genoa.....	898	....	....	....	2,871
Ghent.....	90	40	....	....	395
Glasgow.....	140	53	....	....	40
Hamburg.....	6,772	229	1,377	....	1,410
Havre.....	....	....	....	....	883
Hiogo..... ...	6,544	....	....	....	....
Hull.....	3,001	40	1,888	....	4,731
Kobe.....	10,578	....	....	....	....
Leghorn.....	1,276	....	....	....	185
Liverpool.....	670	195	...	...	9,931
London.....	2,903	1,886	....	....	5,350
Marseilles....	155	....	30	....	1,597
Newcastle....	....	221	....	....	2,454
Rosario.....	....	....	....	....	98
Rotterdam....	1,901	....	67	....	1,487
Stettin.....	907	....	116	....	1,092
Trieste.....	138	....	45	....	....

NEW YORK IMPORTS.

FROM JUNE 19 TO JUNE 26, 1895.

Paper Stock.

Jessup & Moore Paper Company, Lepanto, Antwerp, 409 bs. bagging.
James Pirnie, by same, 250 bs. bagging.
Train, Smith & Co., by same, 257 bs. rags.
Castle & Gottheil, by same, 133 bs. bagging.
Lewy Brothers, Fidelia, Bremen, 1,210 bs. rags.
Lewy Brothers, Palatia, Hamburg, 391 bs. rags.
F. Salomon & Co., by same, 168 bs. rags.
G. Hamilton, Sutherland, Hamburg, 50 tons chemical fibre.
Jessup & Moore Paper Company, Polaria, Hamburg, 128 bs. rags.
E. W. McClintock, Alsatia, Leghorn, 25 bs. rags.
Perkins, Goodwin & Co., Runic, Liverpool, 147 bs. manillas.
Train, Smith & Co., by same, 111 bs. bagging.
G. Stratford, Manitoba, London, 71 bs. bagging.
Jessup & Moore Paper Company, by same, 198 bs. bagging.

Paper.

C. Fischer, München, Bremen, 3 cs.
W. Heuermann, by same, 4 cs.
S. Ascher, by same, 3 cs.
F. R. Lang, by same, 2 cs.
John Munroe Co., Virginia, Stettin, 37 bs.
A. V. Benoit, by same, 13 cs.
Henry Lindenmeyr & Sons, Palatia, Hamburg, 2 cs.
R. F. Downing & Co., by same, 2 cs.
E. Fougera & Co., La Champagne, Havre, 57 cs.
American Tobacco Company, by same, 11 cs.
G. J. Kraft, by same, 1 cs.
R. F. Downing & Co., Sutherland, Hamburg, 8 cs.
F. Beck & Co., St. Louis, London, 1 cs.
W. H. S. Lloyd, by same, 5 bs. hangings.
M. Adler & Co., Veendam, Rotterdam, 27 cs.
M. Rosenthal, by same, 21 cs.
L. DeJonge & Co., by same, 17 cs.
Dingelstedt & Co., by same, 40 cs.
G. W. Sheldon & Co., Manitoba, London, 1 cs.
J. Dickinson & Co., by same, 47 cs.
Henry Lindenmeyr & Sons, Lepanto, Antwerp, 66 cs.
C. D. Stone & Co., by same, 60 bs.
E. Fischer, by same, 23 cs. and 65 bs.
E. G. Soltmann, by same, 9 cs.
Steglich & Baese, by same, 20 cs.
A. V. Benoit, Polaria, Havre, 162 rolls.

PHILADELPHIA IMPORTS.

FOR THE WEEK ENDED JUNE 22, 1895.

Books.

O. G. Hempstead & Co., Penniand, Liverpool, 14 cs.

Paper Stock.

Order, Corean, Glasgow, 225 bs. bagging.
Heidelbach, Ickleheimer & Co., by same, 50 bs. rags.
Jessup & Moore Paper Company, Ripon City, Hamburg, 509 bs. rags.
Same, Pennland, Liverpool, 21 bs. ramie fibre.

Soda Ash.

Order, Corean, Glasgow, 30 cks.
J. I. Keefe, Pennland, Liverpool, 420 bbls.

Caustic Soda.

E. Hill's Son & Co., Corean, Glasgow, 200 drums.

Bleaching Powder.

J. L. & D. S. Riker, Corean, Glasgow, 156 tcs.

Antichlor.

Order, Ripon City, Hamburg, 30 cks.

China Clay.

Order, Corean, Glasgow, 101 cks.
Dunn, Brothers, Pennland, Liverpool, 350 cks. and 478 bags.

Sulphur.

Order, Pennland, Liverpool, 452 bags.

BOSTON IMPORTS.

FROM JUNE 20 TO JUNE 26, 1895, INCLUSIVE.

Paper, &c.

Wm. Guild & Co., Cephalonia, Liverpool, 5 bs. periodicals.
Dennison Manufacturing Company, Angloman, Liverpool, 6 bs. tissue paper.

Paper Stock.

Train, Smith & Co., Belgian King, Antwerp, 983 bs. rags, 161 bs. flax waste.
C. A. Cheney, by same, 225 bs. manillas.
Horace Dutton & Co., by same, 700 bs. rags.
Castle & Gottheil, by same, 75 bs. waste paper.
S. D. Warren & Co., Carlisle City, London, 260 bs. rags.
Wheelwright Paper Company, by same, 112 bs. waste paper.
Crocker, Burbank & Co., by same, 128 bs. waste paper.
C. P. Sumner & Co., by same, 54 bs. waste paper.
Horace Dutton & Co., by same, 59 bs. rags, 60 bs. waste paper, 45 bs. and 638 coils manillas.
T. F. Ring, by same, 67 bs. flax waste.
Train, Smith & Co., Mentmore, London, 404 bs. rags.
W. F. Corne, by same, 28 bs. rags.
Horace Dutton & Co., by same, 277 bs. rags, 1,550 bs. flax waste.
W. F. Corne, Scandinavian, Glasgow, 23 bs. rags.
Train, Smith & Co., by same, 42 bs. rags, 81 bs. waste paper.
Horace Dutton & Co., by same, 91 bs. waste paper.
Train, Smith & Co., Scotsman, Liverpool, 33 bs. manillas, 38 bs. waste paper.
C. A. Cheney, by same, 59 bs. cotton waste, 101 bs. manillas.
R. H. Overton & Son, by same, 110 bs. manillas.
Horace Dutton & Co., by same, 178 coils manillas.
E. P. True, by same, 139 bs. waste paper.

Sizing.

C. A. Cheney, Lancastrian, Liverpool, 110 bags.
Warren & Co., Angloman, Liverpool, 45 bags.
J. W. Barlow, by same, 27 bs.
Thomas Groom & Co., Cephalonia, Liverpool, 60 bags.

Bleaching Powder.

J. L. & D. S. Riker, Angloman, Liverpool, 350 cks.
J. L. & D. S. Riker, Scotsman, Liverpool, 314 cks.
Jerome Marble & Co., Lancastrian, Liverpool, 47 cks.
Bowman, Thompson & Co., by same, 52 cks.
Wing & Evans, Carlisle City, London, 80 cks.

Caustic Soda.

Edward Hill's Son & Co., Lancastrian, Liverpool, 50 drums.

Soda Ash.

Wing & Evans, Lancastrian, Liverpool, 80 cks. and 600 bags.
Wing & Evans, Scotsman, Liverpool, 32 cks.
Warren & Co., by same, 71 cks.
A. Klipstein, by same, 24 cks.
Churchill & Co., by same, 20 cks.
A. Klipstein, Angloman, Liverpool 100 bags.
Wing & Evans, Cephalonia, Liverpool, 64 cks. and 200 bags.

Soda Crystals.

Warren & Co., Angloman, Liverpool, 280 bbls.
Warren & Co., Scotsman, Liverpool, 280 bbls.
Bowman, Thompson & Co., Lancastrian, Liverpool, 25 bbls.

Crude Sulphur.

Linder & Meyer, Lancastrian, Liverpool, 1,668 bags.

EXPORTS of Paper, &c., from New York for the Week Ended June 25, 1895.

BOOKS, to New Zealand, 10 cs.; Venezuela, 3 pkgs.; Amsterdam, 1 cs.; Argentine Republic, 5 cs.; British Guiana, 4 cs.; British possessions in Africa, 3 cs.; Brazil, 5 cs.; British Australasia, 4 cs.; Ecuador, 1 cs.; British West Indies, 16 cs.; Constantinople, 1 cs.; Chili, 2 cs.; Central America, 12 cs.; Hong Kong, 1 cs.; Danish West Indies, 2 pkgs.; Havre, 3 cs.; London, 3 cs.; Liverpool, 16 cs.; Mexico, 41 cs.; Nova Scotia, 1 cs.; Newfoundland, 2 cs.; Porto Rico, 1 cs.; Peru, 16 cs.; Rotterdam, 1 cs.; Southampton, 2 cs.

PAPER, to Southampton, 7 cs.; Colombia, 154 pkgs.; Antwerp, 58 cs.; Argentine Republic, 1 cs.; Bolivia, 2 pkgs.; Bristol, 63 pkgs.; Cuba, 36 pkgs.; Brazil, 73 pkgs.; British Australasia, 492 pkgs.; British West Indies, 404 pkgs.; Ecuador, 41 bdls.; Central America, 57 pkgs.; Glasgow, 58 pkgs.; Dutch West Indies, 52 pkgs.; Hamburg, 2 cs.; Hayti, 5 pkgs.; Japan, 230 pkgs.; Mexico, 40 pkgs.; Liverpool, 34 pkgs.; New Zealand, 572 pkgs.; Newfoundland, 13 pkgs.; Porto Rico, 595 pkgs.; Venezuela, 4 pkgs.

STATIONERY, to New Zealand, 3 cs.; Newfoundland, 6 cs.; Bolivia, 3 cs.; Brazil, 20 cs.; Chili, 5 cs.; British Australasia, 11 pkgs.; Cuba, 7 cs.; British West Indies, 10 cs.; Dutch West Indies, 5 cs.; Central America, 28 cs.; Danish West Indies, 3 pkgs.; Ecuador, 1 cs.; Hong Kong, 2 cs.; Hamburg, 1 cs.; Hayti, 3 cs.; Japan, 20 cs.; London, 12 cs.; Liverpool, 2 cs.; Mexico, 6 cs.; Miquelon, 1 cs.; Porto Rico, 13 cs.; Peru, 13 pkgs.; Colombia, 9 cs.; Venezuela, 23 cs.

SANDPAPER, to Brazil, 2 bs.; Chili, 27 pkgs.; London, 24 bs.; Ecuador, 1 cs.; Mexico, 2 pkgs.; Porto Rico, 5 pkgs.; Peru, 3 cs.; Rotterdam, 28 bdls.; Uruguay, 3 cs.; Venezuela, 2 pkgs.

TWINE, to Argentine Republic, 2 bs.; Brazil, 73 pkgs.; British Guiana, 1 bale; British West Indies, 3 bs.; British Australasia, 1 bbl.; Chili, 6 pkgs.; Central America, 3 bs.; Ecuador, 32 bs.; New Zealand, 1 cs.; Newfoundland, 1 bale; Colombia, 6 bs.; Uruguay, 10 bs.; Venezuela, 11 bs.

WALL PAPER, cases, to British Australasia, 1; British West Indies, 2.

TAGS, cases, to New Zealand, 3.

LABELS, cases, to British West Indies, 2.

NEWSPAPERS, to Chili, 2 cs.; Porto Rico, 56 pkgs.

CARDS, cases, to Hayti, 6.

CARDBOARD, case, to Porto Rico, 1.

AGGREGATES AND VALUES.

Paper, reams.....	—	—
Paper, pkgs..... ...	2,964	$17,337
Paper, cases.....	149	3,852
Books, cases.....	153	8,706
Stationery, cases.....	195	12,021
Rosin, bbls.....	3,607	11,001
Totals.....	7,068	$52,916

Exports General Merchandise for the week ended June 25, 1895..... $4,972,733

CURTIS SPECIALTIES.
Steam, Water, Pump, Temperature and Damper Regulators, Steam Traps and Separators.
MANUFACTURED BY
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29-33 Haverhill St., BOSTON, MASS.

R. D. WOOD & CO.,
Engineers, Iron Founders, Machinists,
400 CHESTNUT ST., PHILADELPHIA, PA.
CAST IRON PIPE.
All Kinds and Sizes. Flanged Pipe.
MATHEWS FIRE HYDRANTS,
SINGLE AND DOUBLE VALVE.
Also with Independent Cut-offs on Nozzles.
EDDY VALVES.
VALVE INDICATOR POSTS
For Mill Yards and Water Works.
SEND FOR PAMPHLET.

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EXPORTER OF
Cotton and Linen Rags.
ALL GRADES OF NEW RAGS, JUTE BAGGING, CUT RAGS, READY FOR THE BOILER.
Please Ask for Samples and Prices.

TRAIN, SMITH & CO.,
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—ALL DESCRIPTIONS OF—
Paper Makers' Supplies,
24 FEDERAL STREET, BOSTON.
BRANCH OFFICES: 140 NASSAU STREET, NEW YORK. 14, 16, 18 & 20 ST. MARY AXE, E. C., LONDON. EDMUND ST. CHAMBERS, LIVERPOOL.

WM. J. CORBETT & CO.,
WHOLESALE DEALERS IN AND PACKERS OF
Woolen Rags and Paper Makers' Supplies,
86, 88 & 90 COVE ST., BOSTON, MASS.
WOOLEN RAGS GRADED IN COLORS AND QUALITY.
OUR SPECIALTIES: "EXCELSIOR" AND "STAR" PACKINGS.

ESTABLISHED 1855.
DARMSTADT & SCOTT,
—IMPORTERS AND PACKERS OF—
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SPECIAL ATTENTION CALLED TO OUR OWN PACKING.

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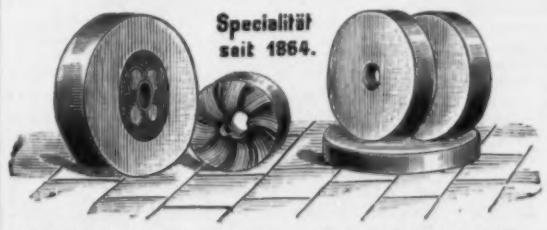
JOSEPH PORRITT & SONS'
ENGLISH FELTINGS.
TRADE MARK.
ALSO IMPORTERS AND DEALERS IN
MARINE BLUE (Aniline) for News Paper Mills,
Jacketing, Roll Cloth, Double Extra Canvas, Ultramarine Blue.

GRIFFIN & LITTLE, PAPER MILL CHEMISTS,
Office and Laboratory: 103 Milk Street, Boston.
EXPERTS IN THE SULPHITE PROCESS AND ALL CHEMICAL MATTERS PERTAINING TO THE MANUFACTURE OF PULP AND PAPER.

A. WERTHEIM & CO.,
HAMBURG, GERMANY,
Exporters of all Grades of Sulphite and Soda Pulps.
SIGMUND GOLDMAN, Agent for the United States and Canada,
BENNETT BUILDING, 99 NASSAU STREET, NEW YORK.



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Pirna on the Elbe,
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GRINDSTONES FOR WOOD PULP IN ALL GRAINS AND MEASURES.
The Quality is acknowledged THE BEST in the world!

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Manufacturers of Alum.
Highest tests, free from iron, and all other grades used by paper makers.
Also manufacturers of ACETIC ACID, SULPHURIC ACID and other chemicals.

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ROOMS 188, 189 & 190.

The Paper Trade Journal.

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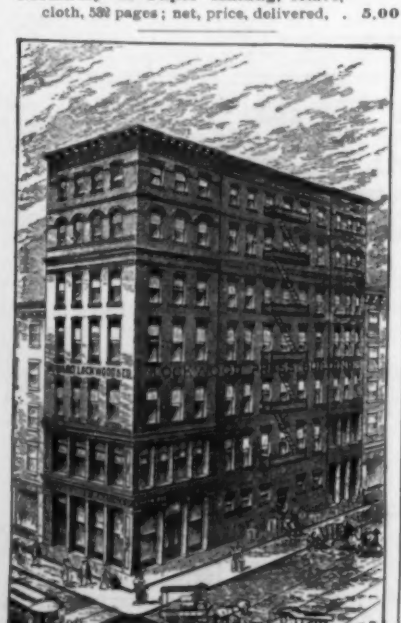

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London Office—ARTHUR MORRIS, General Manager, No. 1 MITRE COURT, FLEET STREET, LONDON, England.

NEW YORK: SATURDAY, JUNE 29, 1895.

THE London correspondent of this paper gives an account of the manufacture of paper from wood in England in 1787. We print in another column a bit of history which goes to show that wood paper was made in this country—in Vermont—in 1790, not far behind the date given above.

IT is intimated that there will not be a meeting of the American Paper Manufacturers' Association this summer. Why? The constitution of the Association fixes the date of the annual meeting, at which time the election of officers occurs, for the last Wednesday in July. Are we to consider the Association functus officio?

RETRENCHMENT made necessary in the executive branches of the Government has resulted in an order abolishing the division of Microscopy in the Agricultural Department, and the transfer of its work and functions to other divisions, the order going into effect on July 1. The work of the division of microscopy included the investigation of food adulterations and experiments relating to textile fibres and fabrics, which will hereafter be divided among the chemical division, the division of vegetable pathology and the office of fibre investigation. The division to be abolished has done very useful work in several directions, especially in its investigations of native bast and fibre producing flora. Secretary Morton believes, however, now that the microscope is in use in all of the divisions which will take up the work of that abolished, that there is no need for maintaining a separate division, and that the work will be as well and more economically done under the new order.

A NEW washing engine is illustrated and described on the first page of this issue of THE PAPER TRADE JOURNAL. This machine consists of a casing, conical in form, within which rotates a cylinder, also conical, provided with ribs and flexible rubbers set spirally. The stock mixed with water being fed in continually and going under the operation of the rubbers, makes its exit through the discharge pipe, the water which carries off the impurities passing through a wire screen located beneath the cylinder. Means are provided for admitting an additional supply of water to the washer when necessary.

CONSUL GERMAIN, at Zurich, Switzerland, seems to believe that a profitable trade in paper can be built up between that country and the United States. While Switzerland's entire import trade in paper is not very large, and the German producer is nearer the market, the consul thinks that the finer grades of writing and surface coated papers would soon find a ready market if presented to the Swiss trade in a proper way. Some of these goods are already known to Swiss consumers through German sources, and if German commission men find it profitable to handle them the manufacturer would find far more profit in direct shipments.

THE Chicago drainage canal has become a prolific source of talk, but if the various hints and conjectures relative to the ultimate uses which the promoters of the canal intend that it shall serve have even a moiety of truth, a little action mingled with the talk would serve the future of the Atlantic shipping ports better. By one of the last measures passed by the Illinois Legislature the definite canal policy of the State has been proclaimed. It is "to procure as soon as practicable the construction of a trunk waterway through the State of Illinois from Lake Michigan via the Des Plaines and Illinois rivers to the Mississippi River, of such dimensions and capacity as to form a homogeneous part of a through route from the Atlantic seaboard via the Great Lakes to the Gulf of Mexico." The West is determined to have better and cheaper facilities for reaching the Atlantic, regardless of cost. Another movement in the Northwest, having Duluth for its initial point, has for its object also a through route to the Atlantic, so that shipments can be made to Europe without breaking bulk. The Duluth people are talking of utilizing the new Canadian canal as part of their route, a plan which should not find favor anywhere. All of these matters are of deep concern to people interested in business of any kind in the East. Better terminal facilities, cheaper transportation, reduction of warehouse and port charges, and many other cognate matters call for action without delay, and at the same time the canal system of the State of New York and its possibilities should not be overlooked.

THERE has been a fair downfall of rain here and at the Eastward for the past two days, and this has been, we presume, beneficial in its effects on the water courses which lend their power to manufacturing industries. It has been a little deterrent to business, and with the usual midsummer easing up helps to made things rather quiet, a condition not altogether deplorable, because the annual stock taking is now in full swing in many establishments. A slight reaction in the prices of some of the staple products is noted; but, generally speaking, the business situation and the outlook remain exceptionally favorable. In the iron and steel trades, including some lines of hardware, the prospects are so enlivening that some thoughtful traders are afraid that things are rushing too fast for the future good of trade, and are trying to keep the threatened boom in abeyance. The good feelings seem justified, however, by the fact that mill products are engaged from six weeks to two months ahead, and there is no abatement of inquiries and orders, but on the contrary they are increasing. The bank clearings of seventy-four cities, reported on the 22d inst., footed up a total of $1,076,000,000, an increase of 7 per cent. over the previous week, 28 per cent. over the total of the same week in June, 1894, and 4 per cent. more than the same week in June, 1893. Railway earnings continue to improve, those for May presenting the most favorable exhibit of any single month for several years past. The demand for seasonable goods is yet good, buying having been free, without overstocking or in any other way imperiling the prospects for an active and profitable fall trade. The sound money movement is gaining friends, and is an important factor in maintaining confidence and improving prices. The gold reserve in the Treasury has passed the legal requirement and is now $107,447,865. The contract with the syndicate, so far as the delivery of gold is concerned, is completed, but the obligation to protect the gold in the Treasury by the exercise of all proper means holds good until October, and it is understood that the syndicate will live up to both the letter and spirit of this obligation. The industrial condition continues to improve, new enterprises being projected, old ones starting up and being enlarged, the numbers of unemployed reduced and wages yet advancing. As an indication of the general feeling that an era of prosperity has begun, it may be cited that the tide of emigration is rising rapidly, showing conclusively that labor itself considers the prospects for employment once more bright and promising. Altogether the commercial and industrial skies continue to clear and grow cheering.

Watermarks.

BY DANDY.

It seems as if the whole trade had wheels. Some of them have them in their heads, but the majority have the kind called "Safeties." One eminently respectable member of society and the trade came to business all fagged out, and when closely questioned as to the cause it appeared that he had been taking a "bike" lesson on the previous evening.

"Why," he said, "it was harder to control that wheel than it is to do the same for prices. Do you know the blessed thing saw a pair of screen swing doors, and do my best I could not prevent it from taking me through them." That wheel was a very intelligent bit of machinery and knew exactly where its rider wanted to go.

This same rider remarked to a colleague who was wrestling with a heavy wheel that he could make it lighter by lighting the lantern. Bystanders afterward said that the assault which followed was perfectly justifiable.

According to the *Sun*, "Major" J. Fred Webster, of Bangor, clubbed a salmon to death a few days ago and sent it to his friend Col. A. G. Paine. The fish was served up in becoming style, and the *Sun* says that among the guests were "Judge" Fullerton and J. Herculean Duffy, a professional wheelman.

It should be remarked that the last named gentleman is only an "amatoor" on the wheel as yet, but he 'opes by strict attention to business to bloom out as a racer.

Some city dealers have gone up country to look at a paper mill; but by a curious coincidence the mill is very near New London, and they are to be there on the very day of the Yale-Harvard boat race. Funny, isn't it? Very funny.

Meetings are the order of the day. The news, the strawboard and wood pulp board men have been at it for some time, and now the sulphite makers have had a preliminary gathering. They have been acquainted with each other's prices for some time, and they will now get acquainted with the fellow who makes them. These meetings are good things, even if they do not eventuate in higher prices.

The board men, however, have made their prices, and say that they propose to stand by them. The pulp board men allege that they really have done nothing; but all the same they are going to elect officers for their association just five days after the "Glorious Fourth."

Talking about getting together, what has become of the remains of that big Western straw paper company, with its mortgage, high priced officers and elaborate trimmings? Looks as if there wasn't going to be enough to hold an inquest on, doesn't it?

The Paper Trade Swimming Club is at it again, and the members are wooing old Neptune as of old. Apropos of that, one man said to another, who was supposed to be up on the styles: "Say, old man, what is the proper thing in bathing suits this year?" "A pretty girl," was the very prompt answer.

Trade Talks.

George E. Callender, of Geo. E. Callender & Co., New York—I am not prepared to make any extended comment on the outlook of business in the paper trade. It is true that we have had a hard time of it for the past two years—ever since 1892. Business does not begin to compare now with what it was then, but what is coming in the future we cannot predict. We think that business is returning—slowly, to be sure, but it is coming back upon a sound basis.

W. F. Felch, Manufacturers' Agent, 51 Leonard street, New York—Soon after what was published in THE PAPER TRADE JOURNAL the gentleman who said it came in here to see me about it and told me that he wanted me to thoroughly understand that I was not included among those to whom he referred, but that he meant an entirely different class. If it was not for that I would have something to say in reply to the allegations that brokers are not legitimate members of the paper trade, and that they injure the business. Whatever are the facts we are not going behindhand in our business, and I take notice that they follow me up pretty closely to see what I am doing. No, I think that it is best not to talk upon the matter, but to maintain a discreet silence, and keep friends on the outside, no matter how one may feel on the inside. You can catch more flies with molasses than with vinegar. The only time I got caught by selling to such men was in the Gilman case, and I shall not have anything more to do with that kind of trade.

Changes, Removals and New Firms.

The *Chronicle*, Nashville, Tenn., is a new paper.

The *Hotel Reporter*, Atlantic City, N. J., is a new paper.

M. G. Sisson, publisher, Greenfield, Ill., has retired from business.

Haring & Fischer, bookbinders, Chicago, Ill., have dissolved partnership.

H. L. Edmunds, stationer, Freeland, Pa., has sold out to Silas Woodring.

A. C. Dickinson, publisher, Canton, Ohio, has sold out to Wm. Lichtenwalter.

H. Y. Stitzer, stationer, Bellefonte, Pa., has sold out to —— Kurtz, of Reading, Pa.

J. E. Farnsworth has been admitted to the business of J. E. Barnes, publisher, Ione, Cal.

The plant of the *Valley Record* Company, Hinsdale, N, H., has been sold to M. J. Madden.

The plant of the *Valley Record*, Hinsdale, N. H., has been sold to Josiah Madden, of Keene.

The *Circuit Rider*, Easton, Md., has been purchased by O. C. Michael, who will remove it to Aberdeen, Md.

The *Educator's Bulletin*, Pittsburg, Pa., is a weekly paper which is soon to be issued in the interest of public, parochial and private schools.

The *Commercial News*, San Francisco, Cal., is a new paper published in Spanish and English, and devoted to the business interests of the Pacific Coast.

The *Indicator*, Philadelphia, Pa., is a new journal devoted to the interests of the negro. It is controlled by a stock company, and edited by J. Henry Bayton.

Frederick Heath and C. B. T. Benton have formed a copartnership to carry on the manufacture of wall paper at Hoboken, N. J.

The Perpetual Ledger Company, Chicago, Ill., has been incorporated by Houston C. Adcock, Eugene H. Garrett and Nathan G. Moore. Capital stock, $1,000.

The William Rutter Company, Harrisburg, Pa., has been incorporated to manufacture books by Lucius W. Elder, Margaret B. Rutter, Mary R. Jenks, Lillie M. Rutter and Joseph L. Rutter. Capital stock, $50,000.

The Southern Publishing Company, Louisville, Ky., has been incorporated, with the following named officers: M. B. Bowden, president; W. A. Ryan, secretary and treasurer, and J. B. Browning, general manager.

The J. W. O. Bannon Company, New York, has been incorporated to carry on a general binding and paper box business. Capital, $15,000, and directors, J. W. O. Bannon, of New York city; William McMurtrie Speer and Amasa J. Parker, Jr., of Albany, N. Y.

The *Slowo*, Milwaukee, Wis., has suspended publication.

The *Evening News*, Lebanon, Ind., has suspended publication.

The *Jewish Advocate*, Syracuse, N. Y., has suspended publication.

The *Home Journal*, Winchester, Tenn., has suspended publication,

F. W. Schissler & Co. have opened a wall paper store at Meadville, Pa.

Lane & Richards, printers, Omemee, Ont., have dissolved partnership.

Asbury Park, N. J., has a new bi-weekly paper called the *News-Letter*.

The *Christian Endeavorer*, Cleveland, Ohio, has suspended publication.

The *Echo* is the name of a new weekly paper published at Wolseley, Assiniboia.

The *Advertiser*, Brockport, N. Y., is a new paper published by Howard & Billyou.

A. J. Hunter, publisher of the *Examiner*, Barrie, Ont., has sold out to Mr. McLaren.

The Federal Wall Paper Company is a new wall paper jobbing house at Brooklyn, N. Y.

The Chicago (Ill.) *Evening Mail* has been sold to George G. Booth, of Detroit, Mich.

The Roxbury Wall Paper Company, Boston, Mass., has sold out to George L. Fisher.

W. H. Echols, bookseller and stationer, Sherman, Tex., has sold out to W. D. Davis.

The *Leader*, Carlisle, Pa., has been purchased by W. Morrow, Tate and Will. T. Eshenaur.

The sporting extra of the *Evening Telegraph*, Philadelphia Pa., has suspended publication.

The Burrage Paper Company has removed from 9 Spruce street to 227 William street, New York.

Graham & Dean, printers, Kingston, Ont., have been succeeded by the *Sun* Publishing Company.

George Vincent & Frère, printers, Quebec, Que., have been succeeded by George Vincent and Adolphe Elzear.

Walton & Co., printers, Sherbrooke, Que., have dissolved partnership. John W. McNicoll continues the business.

The late James Dobson, stationer, Yorkville, Ont., has been succeeded by his danghters, Sarah and Annie E. Dobson.

The Kalamazoo Publishing Company, Kalamazoo, Mich., is adding a wholesale stationery department to its business.

The Smiley Publishing Company, Chicago, Ill., has been incorporated by James B. Smiley, Frank L. Strong and P. R. Barnes. Capital stock, $10,000.

The *Echo*, Chicago, Ill., has been incorporated to do a general printing business by Clinton M. Shultz, Ralph T. Shultz and J. Percival Pollard. Capital stock, $20,000.

Deane & Huff, booksellers, &c., Griffin, Ga., have dissolved partnership, J. H. Huff selling his interest to Henry Amoss. The business will be continued by R. J. Deane and Henry Amoss under the style of Deane & Amoss. The new firm will liquidate for the old concern.

J. W. Gibbes & Co., stationers, &c., Columbia, S. C., have been succeeded by the J. W. Gibbes Stationery Company, incorporated. Capital stock, $8,000, and officers, J. Wilson Gibbes, president; W. H. Gibbes, Jr., secretary and treasurer, and John P. Thomas, Jr., attorney.

The Kines-Philbrick Company, Baltimore, Md., has been incorporated to manufacture and sell office specialties, and to conduct a general stationery and printing business. J. Wm. Kines, F. C. Philbrick, John Turner. Bernard A. Schmidt and Thos. S. Hodson are the incorporators. Capital stock, $20,000.

The copartnership between Wm. A. Russell, trustee, and G. Frank Evans, doing business under the style of the Evans Friction Cone Company, has been dissolved by mutual consent. Wm. A. Russell will liquidate. G. Frank Evans will continue the business in his own name at 85 Water street, Boston, Mass.

The Wall Street Electric News Agency, of New York city, has been incorporated to collect and distribute commercial, financial and other news and conduct publications and to transmit and collect news by machines. Capital, $50,000, and directors, F. W Koutgen, E. J. Welch and O. B. Goldsmith, of Brooklyn. John H. Small, of Brooklyn, subscribes for $48,500 of the stock.

The *Times* Publishing Company, Manchester, N. H., has been organized with a capital stock of $20,000. Officers: President, Edgar J. Knowlton; vice-president, E. D. Houston; secretary, H. W. Eastman; treasurer and business manager, Wm. M. Kendall. The company has purchased the plant, good will and subscription list of the

Saturday Telegram, and will begin the publication of the *Daily Times* on July 1.

The *Empty Bottle*, Houston, Tex., is a new paper.

The *California Signal*, Benicia, Cal., is a new paper published by O. A. King.

The *News*, Falls Church, Va., is a new weekly paper published by Zeigler & Rorebeck.

The *Daily Mail*, Ludington, Mich., was sold recently at chancery sale to App. M. Smith for $1,285.

The *Mercer County Review*, Trenton, N. J., is a new paper published by the Mercer Publishing Company.

The *California Odd Fellow*, Sacramento, Cal., is a new journal published by J. L. Robinette and C. M. Harrison.

Langley Whitney and John N. Watts have purchased a half interest in the *Farmers' Magazine*, Springfield, Ill.

The Northern Newspaper Company, Spokane, Wash., has been incorporated by W. T. Cowles, W. T. Penrose and H. T. Brown. Capital stock, $24,000.

The plant of the *Breeze*, Canso, N. S., has been purchased by W. A. Richardson, of Sydney, who will remove it to Little Glace Bay, Cape Breton Island.

The *Church Guardian*, Montreal, Que., has been purchased by the Church of England Publishing Company, and is now published at Toronto, Ont., under the name of the *Church Evangelist*.

Failures.

J. B. Allen, dealer in wall paper, Buffalo, N. Y., has been sold out by the sheriff.

W. H. Mattox & Brothers, printers, Richmond, Va., have made an assignment.

George W. G. Moore, dealer in wall paper, Newark, N. J., has made an assignment.

K. J. Rogers, dealer in wall paper, Springfield, Mass., has had his store closed by the sheriff.

Joseph Hutton, stationer, &c., Smith's Falls, Ont., has assigned to E. R. C. Clarkson, of Toronto.

The receiver of the James H. Bishop Paper Company, Minneapolis, Minn., has $11,000 on hand, after payment of two dividends of 25 per cent.

Roberts & Hillhouse, booksellers and stationers, Kalamazoo, Mich., who made an assignment on January 12, have closed out their business permanently. This firm had been in continuous business for thirty years in Kalamazoo, and by pluck and enterprise passed safely through several business panics, but was forced to succumb to the late financial depression. Its indebtedness will be paid as soon as it can realize upon its assets.

Mortgages, Etc.

[In the appended list R. signifies a renewal of a pre-existing mortgage; B. S., bill of sale; T. D., trust deed, and Real, a mortgage on real estate.]

MIDDLE STATES.

Mortgagor.	*Amount.*
Clark Pierson (*Record*), Lambertville, N. J...	$1,000
Fred W. Kier, Elmira, N. Y.....	400
H. Schild, New York city (B. S.).....	175

WESTERN STATES.

W. R. Story (W. R. & T. Story), Oakland, Cal. (B. S.).....	1,000
Thos. Story (W. R. & T. Story), Oakland, Cal.....	500
The *Journal of Commerce* Company, Chicago, Ill.....	400
Herald Publishing Company, Lafayette, Ind.	450
J. Coolidge (Mrs.), Boyden, Ia.....	110
M. Lowther, Centerville, Ia. (B. S.).....	1,200
L. E. Shane, New Virginia, Ia.....	150
A. A. Davis, Pulaski, Ia.....	321
T. B. Murdock, Eldorado, Kan.....	1,040
Geo. R. Babcock, Bay City, Mich.....	4,034
A. Fullerton (Fullerton Brothers), Hillsboro, Ohio.....	400
E. L. Millar, Kenton, Ohio.....	1,600
Walter S. Luce (*Daily Press*), La Crosse, Wis.....	4,700

SOUTHERN STATES.

F. S. Kyle, Covington, Ky...	105
G. Kurtz & Co., St. Louis, Mo.....	1,000

LIENS DISCHARGED.

Leroy S. Atwood, Stockton, Cal.....	1,300
Hallock Harmon *Leader* Company, West Superior, Wis.....	1,210

In Town.

Alex. Robertson, Montville, Conn.; A. C. Moore, Bellows Falls, Vt.; H. E. Pratt, Springfield, Mass.; J. T. Emerson, Claremont, N. H.; Harry Pierson and C. H. Doblinski, Lambertville, N. J.; S. S. Stevens, North Hoosick, N. Y.; E. P. Lindsay and Col. S. P. Train, Boston, Mass.

Accidents.

John Kersinger, chief engineer at the Ellsworth Paper Mills, Ellsworth, Ind., was crushed to death beneath a falling mass of strawboard on June 18, while passing through an alley formed of piles of paper. One of the piles collapsed, and fell upon him with such force that his neck was broken, and he was otherwise shockingly crushed.

Fires.

Davis & Davis, booksellers and stationers, Gainesville, Tex., have had a loss by fire estimated at $13,000; insurance, $9,500.

The stock and building of H. S. Garrett & Son's paper warehouse, Chester, Pa., were seriously damaged by fire on June 18. The loss exceeds $1,000, being principally in stock, which is partly insured.

The rag warehouse of Jacob Firestone, St. Paul, Minn., has had a fire loss of about $7,000. The flames originated from spontaneous combustion and started among the bales of rags and paper which filled the building.

Market Review.

OFFICE OF THE PAPER TRADE JOURNAL, FRIDAY, June 28, 1895.

THE MONEY MARKET. — The stock market was weak, and nearly all moving shares closed at lower figures. The demand for call loans on stock collateral was easily supplied at 1@1½ per cent., mostly at the lower rate. Lenders on collateral for definite terms have been a little disappointed in the smallness of the increase in demand for money as the semi-annual interest period approaches, and have therefore been obliged to modify somewhat their demands respecting the character of collateral accepted. The current quotations are 1½@2 per cent. for thirty to sixty days, 2 per cent. for ninety days to four months and 2½@3 per cent. for five to seven months. The supply of commercial paper is fair. Quotations are 2½@2¾ per cent. for sixty to ninety day indorsed bills receivable, 2¾@3¼ per cent. for four months' commission house and prime four months' single names, 3@3½ per cent. for prime six months' and 4@4½ per cent. for good four to six months' single names. The market for foreign exchange was steady to firm in tone, but very quiet. Most bankers were indisposed to trade more largely than absolutely necessary. There were fewer security bills in the market. Posted rates were $4.89 for sixty days and $4.90 for sight. Actual rates were $4.88½@4.88¾ for sixty days and $4.89½@4.89¾ for sight.

THE PAPER TRADE.—The New York dealers in straw and wood pulp boards have come together and made a scale of prices to which they say they will adhere. The pulp board manufacturers have settled on prices for car load lots as follows. Double Star &c., No. 30, $40; No. 35, $37.50; Nos. 40-60, $35; Nos. 65-90, $37.50; Nos. 95-120, $40. For newsboard with not to exceed ten per cent. of sulphite $2.50 per ton extra, and $5 per ton extra with over ten per cent. of sulphite. The prices on brown and brown, solid fibre, Nos. 40-60, $42.50; Nos. 65-90, $45; Nos. 95-120, $47 50; No. 125, $50. Filled boards are $2.50 per ton less. The market generally is unchanged. Trade goes along in an easy way, undisturbed by any startling episodes. Some mills report product as well in hand and under control of orders, but others do not seem to be as well situated. Prices, however, do not improve.

JUTE BUTTS.—The market for jute butts does not seem to interest buyers at all. Some paper quality stock has been offered, but the best offers from consumers were 1.05@1.10c., at which holders declined to sell.

WOOD PULP.—There is a very steady demand for Ground Wood, and prices are as they have been.

WOOD FIBRE.—There is fair call for Chemical Fibre. Domestic Bleached Soda is quoted at 2½@2¾c., as to quality. Domestic Sulphite is quoted at 1¾@2¾c., as to quality, for Unbleached, and 3½c. for Bleached. Foreign grades are quoted as follows: Unbleached Pine, soda process, 2.60@2.75c.; Bleached, same process, 3½@3.90c.; Unbleached, sulphite process, ——@3.15c.; Bleached, do., 3¾@4c.; Bleached Straw Pulp, 3.80c. This week there were imported at this port 50 tons of Chemical Fibre, being all from Hamburg.

FOREIGN RAGS AND PAPER STOCK.—The market is slow and sales are mostly unimportant. We note sales 50 tons SPF's on spot at 2¼c., 50 tons prime Colored Cottons on spot at .95c. and 50 tons New Cuttings on spot at 1.70c. Imports for the week aggregated 3,498 bales and 50 tons, being 2,179 bs. rags, 50 tons chemical fibre and 1,319 bs. manillas. Ports of shipment and quantities are as follows: Antwerp, 257 bs. rags, 792 bs. manillas; Bremen, 1,210 bs. rags; Hamburg, 687 bs. rags, 50 tons chemical fibre; Leghorn, 25 bs. rags; Liverpool, 258 bs. manillas; London, 269 bs. manillas.

DOMESTIC RAGS.—The demand for domestic rags is irregular and uncertain. Whites range from 3@3¼c., according to quality.

BAGGING, &c.—The market for Gunny is quiet and 1@1.02¼c. is quoted, but no sales are reported. Manilla imports for the week aggregated 1,319 bales, being 792 bs. from Antwerp, 258 bs. from Liverpool and 269 bs. from London.

OLD PAPERS.—There is a moderate call for old papers. We quote: No. 1 Hard White Shavings, 2½c.; No. 1 Soft White do., strictly free from wood, 2.05c.; Soft White do., ordinary, 1¾@2c.; Old Ledgers, 1¾c.; Solid Printed Books, 1¼c.; Mixed Shavings, No. 1, 1@1¼c.; Mixed Shavings, No. 2, ¾c.; Extra No. 1 Manillas, 90c.; No. 1 Manillas, ordinary, 75c.; No. 2 Manillas, 60c.; Light Book Stock, 60c.; Folded News (overissues), 50@55c.; Mixed Papers, 35c.; Commons, 25@30c.; Straw Clippings, 45c.; Binders' do., 45c.

STRAW.—Straw is quiet and weak. We quote: Long Rye at 60@65c.; Short Rye at 45@50c.; Wheat at 40@50c.; Oat at 40@50c.

ROSINS.—The demand is somewhat more brisk. We quote: Common to Good Strained, $1.80@1.87½; E, $1.92½@1.95; F, $2.05@2.07½; G, $2.15; H, $2.35@2.40; I, $2.50; K, $2.75@2.80; M, $3.05; N, $3.20@3.25; W G, $3.30.

CHEMICALS.—There is a little more movement in the market for paper makers' chemicals. Under date of June 12 J. P. Brunner & Co. speak of the Liverpool market as follows: "As usual at this season of the year exports of chemicals are falling off, and the demand is falling away, in spite of which quotations are very firm. Of course, from a manufacturer's point of view, prices all round are on such a low basis that there seems little room for any further reduction in values. Soda Ash is selling in a moderate way at late rates. For tierces we quote: Leblanc Ash, 48 per cent., £3 10s.@3 15s. per ton; 58 per cent., £3 15s.@4 per ton, net cash. Ammonia Ash, 48 per cent., £3@3 5s. per ton; 58 per cent., £3 5s.@3 10s. per ton, net cash. Bags, 5s. per ton cheaper than tierces. Soda Crystals are steady at £2 2s. 6d.@2 5s. per ton; less 5 per cent. for barrels. Caustic Soda is not active, but there is no pressure to sell, and spot quotations are unchanged as follows: Sixty per cent., £6 7s. 6d.@6 10s. per ton: 70 per cent., £7 7s. 6d.@7 10s. per ton; 74 per cent., £8 7s. 6d.@8 10s. per ton; 76 per cent., £9 5s.@9 10s. per ton, net cash. Bleaching Powder is scarce for outside makes and dearer in some cases. For 'Union' brands there is no change, quotations for hardwood packages ranging from £7 up to £7 10s. per ton, net cash, according to export market." The spot market is almost bare of Bleaching Powder, and the very limited supply is very firmly held. Alkali has been moving quite freely, Sal Soda is in good demand and Caustic is in fair jobbing request. During the week there have been sales of Bleach at 1.80@1.87½c.; 10 tons Soda Ash at 1¾c.; Caustic Soda, 2.10c., and Alkali .90@1.05c.

CHINA CLAY.—There have been free arrivals during the past week, the bulk of which, however, was sold previously for consumption. Sales are reported from dock of 300 cks. at prices ranging from $11@16 per ton, as to make and quality.

TWINES.—There is a very fair trade in progress, and in some quarters the movement is brisk. We quote: Sisal Hay Rope, 5@6c.; Sisal Lath Yarn, fine, 9¼c., and medium, 9c.; Jute Lines, 7½c.; Jute Ready, 7@7½c.; New Zealand Hay Rope, 6¼@7¼c.; New Zealand Lath Yarn, fine, 9¼c.; medium, 8¼c. Twines—Hemp, 4½ and 6 B Russia, 12c.; 4½ and 6 A American, 12c.; 4½ and 6 D Jute, 9½c.; 4½ and 6 L Jute, 9c.; Hemp Ball, 18 B C, 17c.; 18 C, 15c.; Russian Hemp Hay Rope, 9c.

COAL.—There is no change to be noted in the coal market, and low prices continue to rule.

EDWIN BUTTERWORTH & CO.,
MANCHESTER, ENGLAND,
PACKERS OF ALL KINDS OF
Paper Stock, Cotton Waste and Buffalo Sizing, Wood Pulp, Moist and Air Dry Pulp, Soda and Ground Pulp,
P 83 GUNNY BAGGING, &c.
OFFICE IN NEW YORK:
Vanderbilt Building, No. 132 Nassau Street.
JAMES FIRNIE, A. S. DEMAREST, } Managers.

WATERBURY
Felts and Jackets.
MANUFACTURED BY
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Adapted to *every* grade of paper from the *finest* to the *coarsest*.
The Largest Manufacturers of Paper Makers' Felts in the World.
Our wet machine or pulp felts are *unequaled* for *durability*.
For WRITING and LEDGER PAPERS We warrant a felt equal to anything imported.

PRICES CURRENT.

NEW YORK MARKET.

Paper Market.

DEALERS' SELLING PRICES.

Ledger and Record	$0.16	@	$0.21
Flat Caps, superfines	11½	@	14
Flat Caps, fines	11	@	13
Flat Caps, engine sized	7	@	9
Blotting, American	8	@	12
Blotting, English	17	@	....
Book, super sized and calendered	5	@	8
Book, super sized and tinted	5	@	8
Book, extra machine finish	5	@	....
Book, machine finish, low grade	4½	@	5
News	2¾	@	3
Poster	3	@	..
Hanging, superfine, No. 1	8	@	10
Hanging, superfine, No. 2	6	@	8
Hanging, machine satin	4	@	4½
Hanging, white blank, No. 1	4	@	4½
Hanging, curtain	3½	@	4
Hanging, brown	2½	@	3
Colored papers, double mediums	6½	@	8
Colored papers, glazed medium	7½	@	8½
Colored papers, tobacco	8½	@	9¼
Colored papers, tissues, 20×30, ℔ ream	1.10	@	1.35
Tissues, black, 20×30, ℔ ream	1.40	@	1.50
White tissue, 20×30, ℔ ream	60	@	80
Manillas, Flour sack, cream	10½	@	....
Manillas, Flour sack, drab	9½	@	11
Manillas, Rope, unbleached No. 1	9½	@	11
Manillas, Rope, unbleached No. 2	7½	@	9
Manillas, No. 1, light weight	6½	@	6¾
Manillas, No. 1, heavy weight	6¼	@	6½
Manillas, No. 2	5	@	6
Manillas, Bogus	2¾	@	3½
Wrapping Parchment	16	@	....
Tissue Manillas, full count, weight and size, 24×36, other sizes in proportion	55	@	60
Hardware, light colored, No. 1	4½	@	....
Hardware, No. 1, glazed, tarred	4½	@	....
Hardware, No. 1, glazed	4	@	....
Binders' Boards, ℔ ton, No. 1	70.00	@	90.00
Binders' Boards, ℔ ton, No. 2	30.00	@	40.00
Strawboards, air dried, No. 1, ℔ ton	40.00	@	....
Strawboards, steam dried, No. 1, ℔ ton f. o. b. mill	....	@	....
Straw Wrapping, basis, 15×20, 15½ lbs., 20 sheets—			
36×40, from 38 to 42 lbs. ℔ rm	65	@	....
30×40, from 30 to 34 lbs. ℔ rm	....	@	52
24×36, from 24 to 26 lbs. ℔ rm	....	@	48
22×32, from 24 to 26 lbs. ℔ rm	45	@	....
20×30, 21 lbs., ℔ rm	....	@	34
20×30, from 14 to 17 lbs. ℔ rm	26	@	....
16×22, from 12 to 13 lbs. ℔ rm	23	@	....
18×28	....	@	24
15×20, 10 lbs. ℔ rm	....	@	17
15×20, from 7 to 8½ lbs. ℔ rm	....	@	13
14×18	....	@	12
12×16	....	@	11
11×15	....	@	10
Straw Wrapping, ℔ lb., heavy weight	1.75	@	1.85
Straw Wrapping, ℔ lb., light weight	1¾	@	....
Cigarette, Straw Tissue, per case of 100 boxes, 50 books to the box, 200 sheets to the book	21.00	@	30.00
Tea Papers, 16 sheet quires—			
12×18	....	@	14
14×20	....	@	18
Card Middles, ground wood	5½	@	6¾
Card Middles, long fibre wood	8¾	@	9
Card Middles, rag and wood	6	@	9
Pulp Lined Boards, single manilla, No. 100 and heavier	42.50	@	....
Pulp Lined Boards, double manilla, No. 100 and heavier	47.50	@	...

Woolen Rags.

Comforter Stock	....	@	...
White Woolens	8	@	...
Blue Gray Stockings	7	@	8
White Stockings	10	@	12
Blue Flannels	6	@	...
Reds, old	5½	@	6
Reds, new Shirt Clippings	15	@	16
Mixed Softs, free of Carpets	4½	@	5½
Seamed Cloth	....	@	3½
Skirted Cloth	2½	@	...
New Cloth Clips	7	@	9
New Satinets, clean stock	1½	@	1½
Satinets, old	65	@	75
Seams	1	@	1¼
Delaines, stripped for extract	1½	@	2
Blankets, Woolen	2½	@	2¾
Wool Carpets	1½	@	2
White Linseys	5	@	6
Mixed Linseys	75	@	1

Rags, Rope and Bagging.

White Shirt Cuttings, No. 1	4¼	@	....
Mill Assorted Whites	3½	@	3¾
Unbleached Muslins	4½	@	4¾
City Whites, No. 1	3	@	3¼
New Seconds, light	2¼	@	....
New Seconds, dark	1½	@	2
No. 2 Whites	¾	@	1.15
Cotton Canvas, No. 1	3	@	....
Linen Canvas, No. 1	....	@	2¾
Country Mixed, free of Woolens	60	@	...
Seconds (City)	....	@	....
Colors, ℔ 100 lbs	....	@	....
Manilla Rope	....	@	2½
Manilla Rope, tarred	....	@	....
Gunny Bagging, No. 1	1.10	@	1.20
Mixed Bagging, No. 1	¾	@	1
Burlap Bagging, No. 1	1.10	@	1.15
Kentucky Hemp Bagging	....	@	....
Tar Shakings	1	@	....
Hemp Twine Stock	....	@	....
Jute Waste	¾	@	1¼

Shavings and Old Paper.

White Collar Cuttings	3	@	....
White Envelope Cuttings	3½	@	....
Hard White Shavings, No. 1	2¾	@	3
Soft White Shavings, strictly free from wood	2.15	@	....
Soft White Shavings, ordinary	1¾	@	2
Mixed Shavings, part white	1	@	1½
Ledger and Writing	2	@	2.10
Solid Stock	....	@	1½
Book Stock, No. 1 light	....	@	1½
Old Newspapers	40	@	....
Manillas No. 1	....	@	1.15
Manillas No. 2	80	@	....
Mixed Manillas	60	@	....
Hardwares, No. 1	65	@	....
Mixed Papers	40	@	....
Commons	25	@	30
Binders' Board Cuttings	50	@	....
Strawboard Cuttings	45	@	50

English Rags, &c

New Cuttings, cotton	5	@	5¼
London Fines, cotton	3½	@	4
Cutshots, cotton	2½	@	3
Seconds	1½	@	1.65
Thirds	1¼	@	1½
New Print Tabs	2¼	@	2½
Checks and Blues	2½	@	2¾
Light Prints	1½	@	1¾
Light Fustians	2	@	2¼
Dark Fustians	1½	@	1¾
Black Calicoes	1½	@	1¾
First Canvas Linen	3½	@	4
Second Canvas Linen	3	@	....
Gunny Bagging, No. 1	1½	@	1¾
Gunny Bagging, No. 2	1.05	@	1.20
Burlaps Bagging, No. 1	....	@	1.60
Rope, Manilla	2½	@	....
Rope, Manilla, tarred	....	@	2
Jute Threads	....	@	1½
Clean Jute Ropes	2	@	2½
Mixed Rope	1½	@	1¾
Flax Tow	1½	@	1¾

English Old Papers and Shavings.

Hard Shavings, No. 1	2	@	....
Soft Shavings, No. 1	2¼	@	2½
White and Colored Shavings, No. 1	1½	@	1¾
White and Colored Shavings, No. 2	1	@	1¼
Cream Post Shavings	2½	@	....
Paper Collar Cuttings	....	@	2
Briefs and Letters	1½	@	1¾
Books and Pamphlets	1.10	@	....
Old Newspapers	....	@	....
Broken News and Letters	¾	@	1
Old Blank Books	2¼	@	2½
White and Buff Railway Sheets	1¾	@	....

Hamburg Rags, &c.

N S C, New Shirt Cuttings	....	@	4¼
S P F F F, No. 1 Linens	....	@	3¾
S P F F, No. 2 Linens	....	@	3½
S P F, No. 3 Linens	2	@	2¼
F G, No. 4 Linens	....	@	2
F F, No. 5 Linens	1¾	@	1.85
Extra Fine Blue Linen, light color	2	@	....
L F B, Blue Linens	2¼	@	....
C S P F F F, No 1 Cottons	....	@	3½
C S P F F, No. 2 Cottons	....	@	2¾
C S P F, No. 3 Cottons	....	@	1¾
C C C, Colored Cottons	....	@	75
C F X, Low grade Cottons	....	@	75
Extra Fine Blue Cottons	....	@	1½

Pulps and Fibres.

Ground Wood, domestic, delivered	1	@	1.35
Ground Wood, foreign, ex dock	....	@	....
Soda Fibre, domestic, unbleached	....	@	....
Soda Fibre, domestic, bleached	3	@	3½
Soda Fibre, foreign, unbleached	2.65	@	3
Soda Fibre, foreign, bleached	3½	@	....
Sulphite, domestic, unbleached	2.60	@	3
Sulphite, domestic, bleached	3½	@	3¾
Sulphite, foreign, unbleached	3	@	3¾
Sulphite, foreign, bleached	4	@	4½

Japanese Rags.

Blues, Hiogo, ex store	1.30	@	....

Chemicals, Coloring Materials, &c.

Alkali, 58 ℔ cent	1	@	1.20
Alum, lump	1.65	@	....
Alum, ground	1.75	@	....
Alum, Keystone	1¾	@	¼
Alum, Diamond	....	@	2½
Alum, pearl	2¾	@	2¾
Alum, porous	2¾	@	2½
Alum, Merrimac porous	2	@	....
Aluminous Cake	....	@	1¼
Anti-Chlorine	....	@	2¾
Bichromate Potash, American	....	@	10
Bleaching Powders, spot	1.85	@	1.95
Cambridge Ochre	11.25	@	....
Caustic Soda, 60 ℔ cent	2.30	@	2.80
Clay, China, English, ℔ ton	12.50	@	17.00
Clay, China, "Star"	12.50	@	....
Clay, China, "Keystone"	10.75	@	....
Clay, South Carolina, ℔ ton	9.50	@	10.00
Clay, Terra Alba, French, ℔ cwt	1.00	@	1.12½
Clay, Terra Alba, American, No. 1	95	@	1.00
Corn Starch	3	@	3½
Copperas, American	....	@	80
Extract Logwood	9½	@	....
Mineral Pulp	10.25	@	....
Orange Mineral	....	@	9¾
Potato Starch	4½	@	4¾
Prussian Blue, dry	20	@	25
Prussiate Potash, American	....	@	24½
Rosins, common to good strained, ℔ bbl	1.80	@	1.87½
Rosins, E, ℔ bbl	1.92½	@	1.95
Rosins, F, ℔ bbl	2.05	@	2.07½
Rosins, G, ℔ bbl	....	@	2.15
Rosins, H, ℔ bbl	2.35	@	2.40
Rosins, I, ℔ bbl	2.50	@	....
Rosins, K, ℔ bbl	2.75	@	2.80
Rosins, M, ℔ bbl	....	@	3.05
Rosins, N, ℔ bbl	3.20	@	3.25
Rosins, W G, ℔ bbl	....	@	3.30
Sal Soda	1.10	@	....
Soda Ash Caustic, 48 ℔ cent	1.60	@	1.65
Soda Ash, carbonated, 48 ℔ cent	1.57½	@	1.70
Soluble Blue	40	@	55
Spanish Brown	½	@	1
Sugar Lead, white	12	@	....
Sugar Lead, brown	7	@	....
Sulphate of Alumina	....	@	2¼
Sulphuric Acid, 66 ℔ cent	1	@	1¾
Ultramarine, blue	14	@	17¾
Venetian Red	1	@	1½
Vitriol, blue	5½	@	5¾
Yellow Ochre Rochelle	1.35	@	1.50

BOSTON MARKET.

Paper Stock.

White Rags, No. 1	3½	@	3¾
No. 2 Whites	1¾	@	1¾
Common Seconds	1½	@	1¾
Thirds and Blues	1¼	@	1¾
Southern Mixed Rags	80	@	90
Colors, country	½	@	¾
Colors, city	25	@	30
New Calicoes, light	1¾	@	2
New Calicoes, dark	1½	@	1¾
Shirt Cuttings, best	3¾	@	3¾
Shirt Cuttings, good	3¼	@	3½
Shirt Cuttings, unbleached	3¼	@	3½
Shirt Cuttings, unbleached No. 2	2	@	2½
Shirt Cuttings, cheviots	2¾	@	2½
Overall Cuttings, blue	2¼	@	2¼
Overall Cuttings, brown	1¾	@	1¾
Shoe Rags, bleached	3¼	@	3½
Shoe Rags, unbleached	3¼	@	3¼
Shoe Rags, brown	2¼	@	2¾
Cotton Flannels, bleached	3	@	3¼
Cotton Flannels, unbleached	3½	@	3¾
Corset Rags, drab	3½	@	3¾
Corset Rags, white	4	@	4¾
Tailors' Seconds	1¾	@	1¾
Tailors' Colors	25	@	30
Cotton Canvas	2¾	@	2¾
Cotton Canvas, No. 2	1¾	@	1¾
Linen Canvas	1¾	@	1¾
New Canvas Cutting	3½	@	3¾
Insole Canvas	3	@	3¼
Print Papers, best	30	@	35
Folded News	40	@	45
Old Waste Papers	20	@	30
Manilla Paper, No. 1	1.10	@	1.15
Manilla Paper, good mixed	80	@	90
Manilla Paper, blues	65	@	70
Mixed Book Stock	95	@	1.00
Books and Pamphlets	1.10	@	1.15
Book Stock, light	70	@	75
Ledgers and Letters	1.85	@	1.90
Soft Book Shavings	1¾	@	2
Hard White Book Shavings	2¼	@	2¼
Leather Board Chips	75	@	80
Straw Chips	35	@	40
Shivey Bagging	1¾	@	1¾
No. 1 Factory Bagging	1.00	@	1.10
Burlap Bagging	1.00	@	1.10
Burlap Bagging, large pieces	1¼	@	2
Kentucky Bagging	1	@	1½
Mixed Bagging	¾	@	¾
No. 2 Bagging	½	@	½
Shakings, soft	¾	@	¾
Tarred Shakings	1	@	1¼
Standing Rigging	2¼	@	2½
Standing Rigging, foreign	2¼	@	2¾
Bolt Rope	2	@	2.05
Oakum Junk, No. 2	1½	@	1¾
Tarred Paper Junk	1.15	@	1.20
Tarred Paper Junk, inferior	¾	@	¾
Manilla Rope	1¾	@	1¾
Tarred Manilla	1¾	@	1¾
Hemp Strings	1	@	1¼
Sisal Strings	1.15	@	1.20
Wool Strings	1.10	@	1.35
Flax Tow	½	@	¾
Flax Waste	¾	@	¾

New Papers.

Superfine Book	....	@	....
Fine Book	....	@	....
News, rag and wood	....	@	....
Manilla, Cream Rope	....	@	....
Manilla, No. 1, Rope	....	@	....
Manilla, Extra Jute	....	@	....
Manilla, Jute and Gunny	....	@	....
Manilla, No. 2	....	@	....
Manilla, Bogus	....	@	....
Hardware, No. 1, tarred	....	@	....
Hardware, No. 2	....	@	....
Hardware, red	....	@	....
Strawboards, air dried, ℔ ton	....	@	....
Strawboards, steam dried, ℔ ton	....	@	....
Straw Wrapping, heavy	....	@	....
Straw Wrapping, light	....	@	....
Binders' Boards, ℔ ton	....	@	....
Leather Board, Common, ℔ lb	....	@	....
Leather Board, counter	....	@	....
Leather Board, extra	....	@	....
Tar Boards, ℔ ton	....	@	....

Chemicals.

Alkali	92½	@	1.00
Aluminous Cake, currency	1¾	@	1¾
Alum, American ground	1.65	@	1.70
Alum, American lump	1.60	@	1.65
Anti-Chlorine	2	@	2½
Bichromate Potash	8½	@	9
Bleaching Powders	1.85	@	2
Caustic Soda, 74 ℔ cent	2½	@	2¾
Clay, English, ℔ ton	13.00	@	17.00
Clay, American, ℔ ton	10.00	@	11.00
Copperas, ℔ lb	45	@	47½
Extract Logwood	5½	@	10½
Lime, Rockland, ℔ bbl	85	@	90
Prussian Blue, ℔ lb	35	@	38
Prussiate Potash, yellow	19	@	20
Prussiate Potash, red	36	@	38
Rosin, common strained, ℔ bbl	1.90	@	2.50
Rosin, Medium	2.30	@	3.00
Rosin, extra pale, ℔ bbl	3.00	@	4.50
Sal Soda, ℔ lb	67½	@	70
Soda Ash, 48 ℔ cent. caustic	1.50	@	1.50
Soda Ash, 48 ℔ cent. carbonated	1.00	@	1.25
Soluble Blue	2.50	@	3.50
Sugar Lead, white	8½	@	....
Sugar Lead, brown	5½	@	6
Sulphuric Acid, 66°	¾	@	1¼
Terra Alba, ℔ ton	9.00	@	15.00
Ultramarine, ℔ lb	7	@	25
Venetian Red, ℔ lb	1½	@	2½
Vitriol, Blue	4	@	4¾
Yellow Ochre	½	@	1

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Twenty-five words or less, one dollar each insertion. Over twenty-five words, four cents a word each insertion, up to eighty words. Cash should accompany order.

Over eighty words, or displayed advertising, will be charged for by the inch, according to our regular schedule of rates.

Answers can come in our care and will be promptly forwarded without extra charge.

WANTED—MACHINE TENDER TO RUN 60 inch wet machine on binders' boards; must be sober, steady and capable of doing first-class work and keep machine in order; wages $1.75 per day; steady work to the right man. K. W., care Journal.

WANTED—POSITION AS SUPERINTENDent in manilla mill; thoroughly understand manillas; experienced in constructing and starting mills; open for engagement about August 1. M. S. H., care Journal.

WANTED—TO LEASE SMALL MILL IN NEW Jersey or Pennsylvania near Philadelphia or New York. Address X. Y. Z., care of this Journal.

WANTED A PARTNER—ONE WHO UNDERstands the manufacture of tissue paper preferred. D. Y. W., care Paper Trade Journal.

SITUATION WANTED—AS FOREMAN OR boss machine tender; accustomed to large machines and high speed; book, news and manilla; at work now in new mill; best of reference. Address G. W., care of Paper Trade Journal.

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By young married man, as boss in color department; understands mixing colors for fine colored, white, plated and chromo papers, enameled and glazed, ivories and satins for lithograph, bristols, boxboards and wedding cards; can give good reference. Apply to COLOR MIXER,
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My attention having been called to the fact that certain parties are infringing certain Letters Patent granted to me, to wit: No. 212,866, dated March 4, 1879, covering a new form of carpet lining, and No. 235,698, dated December 21, 1880, covering the method of and apparatus for making the same, this is to notify all such persons, whether manufacturers or dealers, that any infringement of either of said patents will be prosecuted to the full extent of the law. MOSES NEWTON, Patentee.

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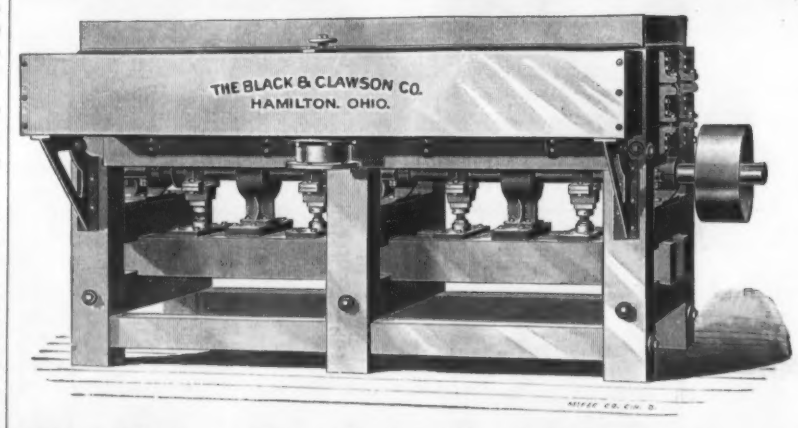

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One 74 inch double cylinder machine, consisting of screens, two molds, 30x74 inches; first and second presses; wood and iron rolls; fifteen iron dryers, 36x72 inches; stack of nine chilled rolls, revolving reel, slitter and winder, with Marshall driving train.
One 56 inch double cylinder machine, consisting of knocker screen, two molds, 30x56 inches; good, sound vat; first and second presses; three iron and one wood roll, 12x55 inches; nine iron dryers, 36x54 inches, with heavy frames, siphon packing boxes and patent exhaust; one stack of five chilled rolls, two 12, three 7x54 inch face; one cone pulley cutter, with 54 inch knife; upright reel; in excellent condition.
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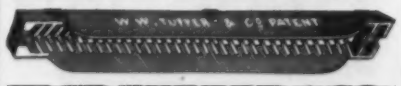

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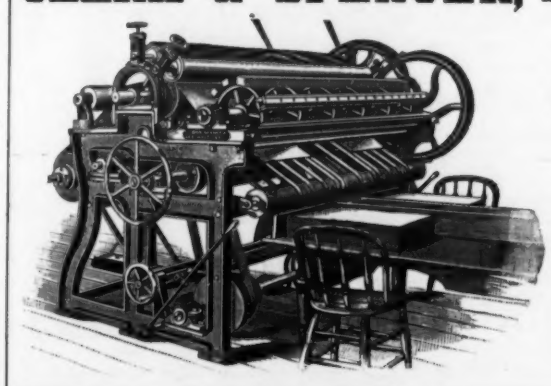

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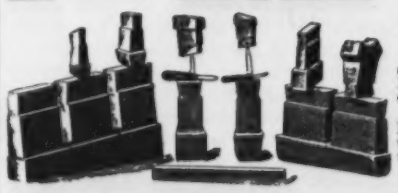

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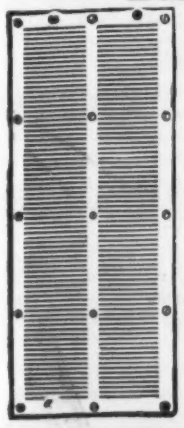

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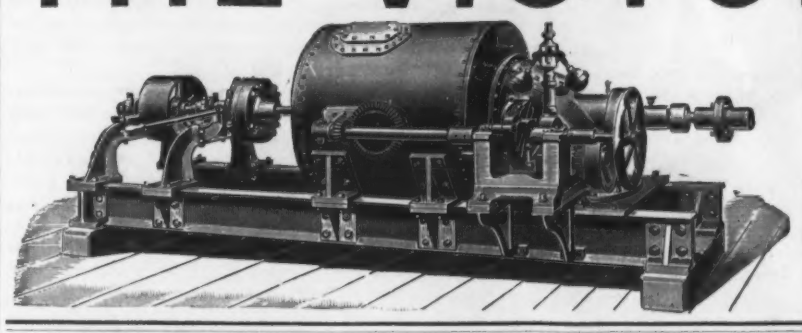

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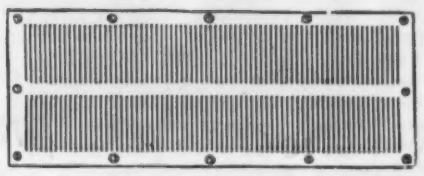

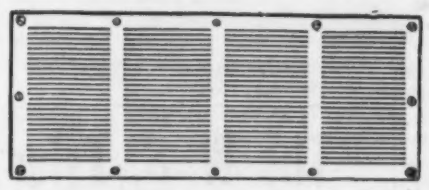

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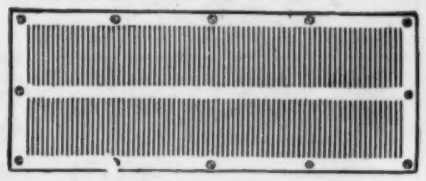

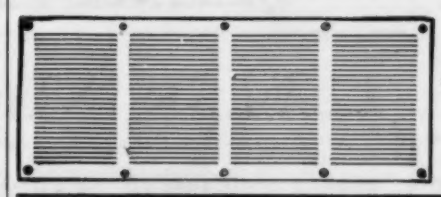

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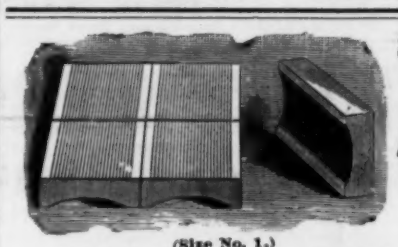

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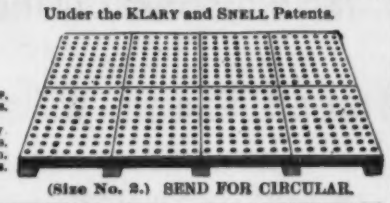

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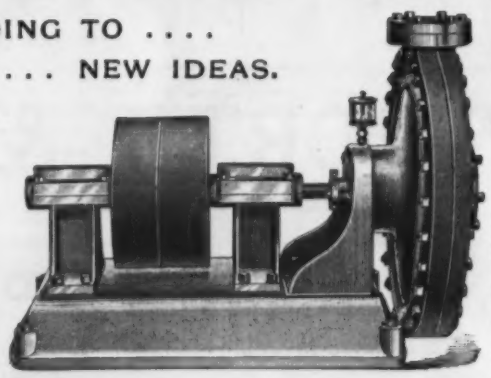

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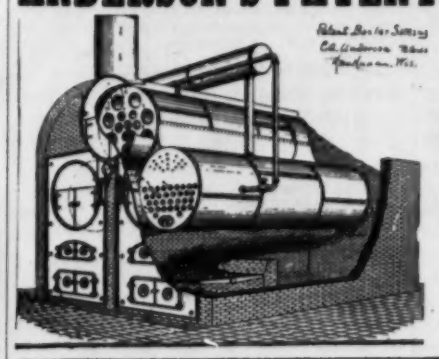

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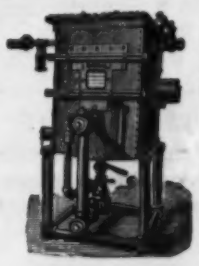

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Will earn its cost in four months' use.

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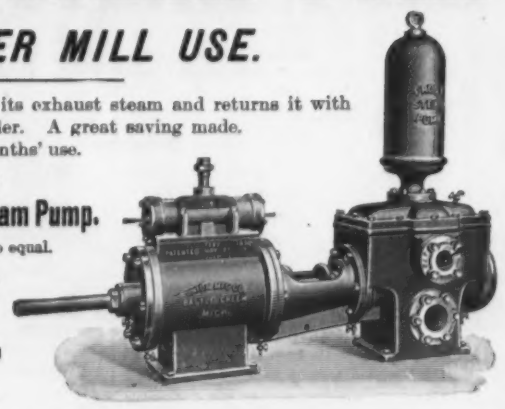

Manufacturing News.

EASTERN STATES.

The Rex Box Company, Southford, Conn., is erecting a new plant near the Rockland mill of C. M. Robertson, Montville, Conn. The building is 100x40 feet, and the plant will have a capacity of 200,000 boxes a day. It will begin operations about the middle of August, and will turn out a general line of folded boxes.

It is reported that the water will be out of the canal at Windsor Locks, Conn., for several days during the week of July 4 to permit repairs to be made.

The Whiting Paper Company, Holyoke, Mass., has decided to build an addition to its No. 1 mill to give more room to the finishing department. The new addition will be 120x45 feet, four stories high, and will give an additional floor space of 25,000 square feet.

About 50 feet of the wooden penstock at the mill of C. M. Robertson, Montville, Conn., was torn out a few days ago. The old penstock will now be removed and will be replaced by an iron one 200 feet in length.

The work on Shepley's new pulp mill at Sheldon Springs, Vt., progresses. The dam over the Mississquoi River and a canal 50 rods in length are under construction.

F. E. Nesmith & Co., paper box manufacturers, Rockland, Mass., propose, it is said, to build a new factory 150x40 feet and three stories high.

The mill of the Russell Paper Company, Lawrence, Mass., shut down at midnight on June 20, on account of low water. The mill people pay for water until 12 o'clock, and in case of scarcity it is understood that the supply will be cut off at that hour.

MIDDLE STATES.

Baker & Shevlin, Saratoga, Springs, N. Y., have lately shipped winder shafts to the Cliff Paper Company, Niagara Falls, N. Y.; the Victoria Paper Mills, Fulton, N. Y., and the Nashua River Paper Company, East Pepperell, Mass.

The new boiler house for the Piercefield Paper and Mining Company, at Piercefield Falls, N. Y., has been completed by the builders of the Berlin Iron Bridge Company, East Berlin, Conn.

G. P. Rogers has sold his interest in the White Toilet Paper Company, of Seneca Falls, N. Y., to a New York firm, which will remove the office to that city. The manufactory will continue at Seneca Falls.

H. W. Knight has sold his paper mill at Seneca Falls, N. Y., to Ingersoll & Son, of Randolph, N. Y., who are now running it to its full capacity.

T. J. Parkinson has sold her interest in the Cascade Paper Mill, Chittenango Falls, N. Y., to Albert Nichols.

Baker & Shevlin, Saratoga Springs, N. Y., lately shipped eight screens and two sulphite fibre washers to the Hudson River Pulp and Paper Company, Palmer's Falls, N. Y.

The Consolidated Wall Paper Company has leased another factory on North Tenth street, Brooklyn, N. Y., and may decide to keep its factory at Mamaroneck, N. Y., running also.

In a suit against the Pennsylvania Railroad Company for damage to the business and property of the Ashland Paper Mills, owned by S. A. Rudolph, at West Manayunk, Pa., the jury rendered on June 23 a verdict of $33,686.20 for the plaintiff.

The High Falls Sulphite Pulp and Mining Company, Potsdam, N. Y., has begun the erection of a new pulp mill near Chateaugay, N. Y., the capacity of which will be three carloads of pulp a day.

WESTERN STATES.

George A. Whiting, of Menasha, Wis., has put in supercalenders, and will now make supercalendered paper. Mr. Whiting has also made a contract with the Pusey & Jones Company for a 120 inch Fourdrinier, which is guaranteed to run 400 feet per minute. The machine will have a 60 foot wire, twenty-two 4 foot dryers and four dryers for the felt. The mill will also put in a 116 inch machine, but the contract for this has not yet been awarded.

The Grand Rapids Pulp and Paper Company, Grand Rapids, Wis., owner of the old Biron saw mill and water power, near that city, has decided to build new dams and erect a pulp and paper mill at a cost of $200,000.

The new paper mill of the Park Falls Paper and Pulp Company, Park Falls, Wis., is now up, and the machinery is being put in position. It is expected that the eight-grinder pulp mill will be ready to run by July 1 and the paper mill by August 1. The latter will be equipped with one 96 inch machine and will make print paper.

It is reported that the Menominee and Marinette Paper Company, Marinette, Wis., will build a $50,000 sulphite mill as an addition to its present plant.

SOUTHERN STATES.

It is reported that W. M. Moore proposes to build a paper mill at Lancaster, S. C.

Dewing & Sons are erecting a saw, planing and pulp mill at Elkins, W. Va.

CANADA.

The Lincoln Paper Mills Company, Limited, Merritton, Ont., has put in a new screen, built by Baker & Shevlin, Saratoga Springs, N. Y.

Work has begun on the site of the pulp mill to be erected by the Maritime Sulphite Fibre Company at Chatham, N. B.

Obituary.

WILLIAM PICKHARDT.

William Pickhardt, the senior partner of the firm of William Pickhardt & Kuttroff, died suddenly on June 24, at the Hotel du Nord, Cologne, Germany. Mr. Pickhardt was born on November 22, 1834, in Berghausen, Germany, where his family had lived for many generations. During his youth he studied architecture, intending to follow his father's profession. He came to America when twenty-one years old, and shortly afterward became a member of the firm of F. Bredt & Co., importers of colors and felts. He left the firm after several years, returned to Germany, and in 1870, returning to New York, formed a partnership with Adolf Kuttroff, and began the importing of dyestuffs, colors and chemicals. He was married in 1862 to Miss Beresford Strong, daughter of John Henry Strong.

Mr. Pickhardt was a member of the Chamber of Commerce, the Manhattan Club and the Gentlemen's Driving Club. He leaves a very fine estate in Berghausen, Germany, which was left to him by his father, and an immense tract of land in the Adirondacks, at Schroon Lake. He there maintained the Wilbrook Stud Farm, and bred many fast trotters.

Mr. Pickhardt had lived at 13 West Eighty-second street since last November. About a year and a half ago he had a bad attack of the grip, and it was in search of better health that he went to Germany.

He was buried on Thursday in the family plot at Berghausen. Services were held at his homestead in Germany and at his New York residence at the same hour. There was also a memorial service in St. Andrew's Chapel, Schroon Lake.

Mr. Pickhardt leaves a wife and four sons —Emile, Sydney, Adrian and Ernest—and one daughter—Ione.

He built a very handsome mansion at the corner of Seventy-fourth street and Fifth avenue, but never lived in it, and only recently it was sold for $472,500.

D. J. Doyle, of the firm of Doyle Brothers, publishers, Shenandoah, Pa., is dead.

Ferdinand Schoettle, manufacturer of paper boxes, Philadelphia, Pa., is dead.

Sulphite Manufacturers Meet.

The manufacturers of sulphite fibre had a meeting at the office of the Howland Falls Pulp Company, Boston, Mass., on Wednesday last, there being present: Frederick Bertuch, representing J. & J. Rogers Company and the Glens Falls Paper Mill Company; E. Meurer, Hudson River Pulp and Paper Company; J. Fred. Ackerman, Richards Paper Company and Piedmont Pulp and Paper Company; James Conley, Manufacturing Investment Company; E. F. Birmington, Dexter Sulphite Pulp and Paper Company; G. H. Russell, Howland Falls Pulp and Paper Company; David Cowles, Lisbon Falls Fibre Company; F. C. Whitehouse, Barclay Fibre Company; B. F. Hosford, Bangor Pulp and Paper Company; T. P. Burgess, Burgess Fibre Company; N. M. Jones and Thomas H. Draper, Katahdin Pulp and Paper Company.

There was an informal discussion, from which it appeared that the country produced daily about 800 tons of sulphite fibre, of which 200 tons are consumed by the manufacturers' own mills, the other 600 tons coming onto the market. Those present at the meeting represented about 500 tons daily product.

At the suggestion of Mr. Burgess and on motion of Major Ackerman the following named gentlemen were constituted a committee to devise ways and means for improving the condition of the trade: T. P. Burgess, N. M. Jones and E. F. Birmingham.

Major Ackerman and Frederick Bertuch were constituted an advisory committee to act with the committee named.

The committee held a meeting at the Parker House later in the day and formulated a report, which will be presented at a meeting to be held in Boston on July 10.

The general opinion was that production was very little in excess of consumption, and that better prices could be realized without detriment to paper makers.

Bids for furnishing stationery for the House of Representatives for the fiscal year beginning July 1 will be opened at the office of the Clerk of the House of Representatives on July 9.

Personals.

Byron Weston and wife and E. C. Rogers and wife sailed for Europe last Tuesday on the Spree.

R. H. Overton, of R. H. Overton & Son, is spending a short vacation at Cooperstown, N. Y.

James A. Mullen, late of the Chelsea Paper Manufacturing Company, is now general manager of the Saugerties Manufacturing Company, Saugerties, N. Y.

Charles T. Price, of the Analomink Paper Mills, Modena, Pa., is going to Menasha, Wis., to take charge of the George A. Whiting mill.

F. E. Gleestelle, formerly superintendent of the Lambertville Paper Company, Lambertville, N. J., has been succeeded by Mr. Meeder, late of the Jacoby Paper Company, Middletown, Ohio.

James Hammill, of Lambertville, N. J., has taken charge of the mill of the Carolina Fibre Company, at Hartsville, S. C. The mill is running on paper and sulphite fibre, the latter being made from yellow pine.

Walter Greenough Morse and Elizabeth Crosby Kimball were married at Revere, Mass., on June 26. The ceremony was largely attended. Mr. Morse is a member of the P. P. Kellogg Company, Springfield.

THE "Hamilton" Felt.

"Best and Most Economical Made."

The Longest Runs

are always made with the "Hamilton." Once accustomed to its use, you will buy no other. Prices as low as inferior makes are sold at.

In ordering mention kind of stock used, quality of paper made and speed of machine.

Shuler & Benninghofen, Hamilton, O.

The W. S. Tyler Wire Works Co.,

CLEVELAND, OHIO.

MANUFACTURERS OF

FOURDRINIER WIRES,

Cylinder Faces and Washer Wires.

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F. P. VAN DENBERGH, B.S., M.D., F.C.S. R. A. WITTHAUS, A.M., M.D. Consulting. ISAAC KEMOR, Ph.D.

CHEMICAL ENGINEERS, ANALYSTS AND INDUSTRIAL CHEMISTS.

Analyses, processes and counsel in sulphite, pulp and paper manufacture. Ten years Chemists to the City of Buffalo, and Professors of Chemistry University of Buffalo.

LABORATORY: Erie County Bank Building, Niagara and Main Sts., BUFFALO, N. Y.

JUTE AND LINEN Paper Stock.

J. & W. SMITH,

DUNDEE, Scotland.

Packers and Shippers of

Clean Jute Threads, Clean Jute Ropes, Gunny Bagging, Manilla Ropes, Bleached Linen Cuttings and Bleached Linen Threads.

ENGINE CLEANING WASTES, Wadding Wastes, Colored Jute Wastes, Bleached Jute Wastes, Felting Wastes and Carded Jute Tows.

OFFICES: CALCUTTA BUILDINGS.

WORKS: COMMERCIAL COURT.

WAREHOUSES: EXCHANGE STREET.

DUNDEE, Scotland.

WILL. MUNDS,

Dresden, Germany.

—CENTRAL OFFICE FOR THE SALE OF—

Sulphite, Sulphate and Soda PULPS.

Eighteen Mills for Chemical Wood Pulp represented

Bleached and Unbleached; supplied in all qualities and by all processes.

Specialty: The Strongest Fibred Qualities. (MITSCHERLICH PROCESS.)

STRAW PULP—FIRST-CLASS BLEACHED.

THE GENERAL FIRE EXTINGUISHER COMPANY,

CONTROLLING THE INVENTIONS AND APPARATUS PERTAINING TO AUTOMATIC SPRINKLERS OF

Frederick Grinnell, William Neracher, John Hill, William Kane and others.

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EXECUTIVE OFFICES, PROVIDENCE, R. I.

Noble & Johnston Machine Co.,

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Manufacturers of

Paper Mill Machinery.

Jordan & Beating Engines.

Iron or Wood Tubs. Laid or Steel Bars and Knives. Bed Plates and Jordan Fillings of every description a specialty. Correspondence solicited.

HOLLINGSWORTH & WHITNEY CO.,

MANUFACTURERS OF ALL GRADES OF

Manilla Papers AND Pure Fibres.

PROPRIETORS OF

TACONNET PAPER MILLS, WINSLOW, ME.....Product. 40 tons Manilla Paper daily.
AROOSTOOK MILLS, GARDINER, ME.....Product: 8 tons No. 1 Manilla daily.
COBBOSSEE MILLS, GARDINER, ME.....Product: 10 tons No. 1 Manilla daily.
PEQUOSSETTE MILLS, WATERTOWN, MASS.....Product: 12 tons No. 1 Manilla daily.
TACONNET PULP MILLS, WINSLOW, ME.....Product: 50 tons Wood Pulp daily.

Boston Office: 44 FEDERAL STREET.

New York Office: Mutual Reserve Building, 309 Broadway, cor. Duane St.

Supplies for the Bureau of Engraving and Printing.

The following awards have been made for supplies of paper, &c., for the Bureau of Engraving and Printing, Washington, D. C., for the next fiscal year:

5 rms plate paper, 24x32, 150 lb, 18¼c per lb, E. S. Ryder.

10,000 lbs pressboard, American, 6c, Woolworth & Graham.

25 rms manilla, 22x25, 40 lb, strong fibre, 3⅜c per lb, Dobler & Mudge.

250 rms do 30x40, 50 lb, 3¼c per lb, do.

50 rms do 80 lb, 3¼c per lb, do.

3 rms do 100 lbs, 3½c per lb, Woolworth & Graham.

5 rms do 30x42, 170 lb, flat, sized and calendered, 3 7-10c per lb, S. M. Kennedy & Co.

15 rms do 30x40, 225 lb, sized and calendered, 5c per lb, Easton & Rupp.

2,000,000 sheets white printing, 18½x20¾, 34 lbs to 1,000 sheets, 5c per lb, New York and Pennsylvania Company.

1 rm white record, regular sizes and weights, 17c per lb, Easton & Rupp.

10 rms writing, white wove, 8c. per lb., do.

20 rms book, 17x22, 12 lb, flat, 51c, do.

20 rms do 26x40, 35 lb, flat, $1.40, Dobler & Mudge.

1 rm do 24x38, 60 lb, $2.55, Easton & Rupp.

5 rms marble, 18½x29½, $3.47, Woolworth & Graham.

10 rms paraffine, 24x36, flat, $1.45, Easton & Rupp.

50 rms red glazed, 20x30, 24 lb, $2, Dobler & Mudge.

600 rms shoe manilla, 11x15, 400 sheets to rm, 8½c, Easton & Rupp.

1 rm white tissue, best, 34x36, 75c, E. R. Bulkley.

10 rms Whiting's writing, 14x17, 18 lb, all colors, $1.95, Dobler & Mudge.

1 ton strawboard, 26x38, steam dried, $32.50, S. M. Kennedy & Co.

1 ton tarboard, 22x28, $43, Dobler & Mudge.

5,000 to 50,000 sheets bond and parchment, white, 40 per cent discount, Crane Brothers.

5,000 sheets bond, colored, 40 per cent discount, do.

50,000 envelopes, made of heavy manilla paper, entire inside of flap heavily gummed, printed, $6.60 per M, Easton & Rupp.

1,000 lbs sealing wax, red, 1 lb sticks, unpolished, 15c, W. Ballantyne & Son.

General Notes.

The plant of Skinner & Rogers, publishers, Holyoke, Mass., has been attached.

The plant of R. C. Hartranft, publisher, Philadelphia, Pa., is advertised to be sold out.

The Portland and Rumford Falls Railway has got out a new map and time table of trains running between Rumford Falls and Lewiston and Rumford Falls and Portland. This also contains information how to reach Rumford Falls, and gives an account of the industries and resources of the place.

The Riverside Paper Company, Holyoke, Mass., has issued a map of the manufacturing district of the city of Holyoke. The map is well executed and is printed on the Magna Charta bond paper made by the company. It is put up in cloth covers, and will be a useful guide to any person desiring to visit the various manufacturing interests of Holyoke.

As is well known, the Pennsylvania Salt Manufacturing Company is the sole importer of kryolite, from which the celebrated "Natrona Porous" alum is made. One of the company's vessels, the bark Fluorine, came into port a few days ago after a thirty-nine day passage from Ivigtut. The passage was extraordinarily rough, and during it the vessel encountered heavy pack ice which was thickly studded with icebergs.

The Hogan Boiler Company, Middletown, N. Y., publishes the *Boiler Review*, which contains a number of interesting articles reviewing theory and practice relating to the design, construction and operation of steam boilers. This same company has also issued a pamphlet entitled "Truths," which sets forth the features and advantages of the Hogan stationary and marine water tube boilers. Either of these publications can be had by addressing the company.

A dictionary of paper making terms, entitled "Paper Industrial Dictionary," prepared by Lennart Akesson, has been published at Lucerne, Switzerland. It gives the technical terms and expressions of the paper making trade in English, French and German, and embodies, besides, an interesting collection of portraits, including manufacturers, presidents of trade associations, inventors, &c., connected with the trade. It is neatly bound in cloth, and contains printed specimens of papers made in various countries, with the origin and quality of each sheet upon its margin in all three languages. Lists of manufacturers and firms complete this valuable collection of data, all of which will be found useful by the trade. This dictionary can be procured by addressing Howard Lockwood & Co.

Strawboard Dealers' Combination.

The New York dealers in strawboard held a meeting at the Broadway Central Hotel last Thursday, there being present D. J. O'Connell, of the American Straw Board Company; Henry Lindenmeyr, Jr., of Henry Lindenmeyr & Sons; H. M. Robertson, of H. M. Robertson & Co.; C. W. Baxter, of Spaulding & Tewksbury; G. L. Jaeger, of G. L. Jaeger; G. L. Cook, of the New York Straw Board Company, and D. A. Barry, of H. A. Butterfield & Co. Mr. Jaeger was elected chairman and Mr. Barry secretary.

The meeting finally decided on the following list of prices, and decided by unanimous vote to maintain these figures for New York:

Strawboards in less than carload lots:

Nos.	Price Per Ton.
On basis—30, 26x38	$38.00
35	35.50
40–90	33.00
95–120	35.50

Less 3 per cent. cash thirty days, net ninety days.

Lining 40 and 45 cents per hundred.

Wood board—natural:

Nos.	Price Per ton.
40–90, with chip centre	$35.50
40–90, all wood	36.50
95–120, with chip centre	38.00
95–120, all wood	39.00
125 and thinner, wood or chip centre	40.00

Less 3 per cent. cash thirty days, net ninety days.

Newspaper boards, blue tinted pulp and Star wood board:

Nos.	Price Per Ton.
40–60	$38.00
65–90	40.50
95–120	43.00

In lots of twelve tons or more, for immediate delivery from store, there is to be a reduction of $1.50 per ton.

No boards are to be carried on memorandum.

Wood Paper in 1790.

It is stated that paper was made from wood at Fair Haven, Vt., in 1790 by Mat thew Lyon, one of the original grantees of the town, who was born in Wicklow, Ireland, in 1746, and died on August 1, 1822, after having been elected to Congress from three States and having been one of the martyrs to the alien and sedition law.

He became a resident of Fair Haven in 1783, having, with Ager Hawley, previously established a grist mill and a saw mill there. In 1785 he established extensive iron works, and in 1790 built a paper mill in which he manufactured paper from the bark of basswood trees.

The *Farmers' Library*, a newspaper which he began to publish in 1793, was printed upon paper made in his mill from wood pulp.

This pioneer manufacturer of paper from wood had a remarkable career. His parents were poor, and when at the age of thirteen he came to America he was obliged to indenture his person to pay for his passage. On arrival in New York he was assigned to Jabez Bacon, an eminent merchant of Woodbury, Conn., who sold the indenture to Hugh Hannah, of Litchfield, Conn., who later sold it to one of the founders of Danville, Vt., for a pair of steers, and because of this Lyon's favorite oath in later years was "by the bulls that bought me."

In 1776, two years after the close of his term of service, Lyon was a lieutenant in command of a post of observation in northern Vermont, and in the same year he was a delegate to the Dorset convention.

In 1796 he was elected to Congress, and was re-elected in 1798. In this last named year he was indicted under the alien and sedition law for writing a letter published in the *Vermont Journal* reflecting upon President Adams. He was convicted, and was sentenced to four months' imprisonment and fined $1,000.

He was re-elected to Congress while in jail, and served until March, 1801. On his return to Fair Haven he found his business embarrassed, and soon moved to Kentucky, where in 1803 he was elected to Congress, and was given successive re-elections until 1811. In 1820 he removed to Arkansas, and he was the first delegate elected from that territory to Congress, but died before he could take his seat.

The largest pile of sawdust in the world is at Cheboygan, Mich., in the centre of the city. It is nearly 800 feet long, about 600 in width, from 20 to 60 feet in height and contains about 30,000,000 cubic feet. This ought not to be wasted.

Care of Shafting.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

By M. W. Danielsen.

Running shafting on the right principle is good. Less power is required, while the movement of the shafting is smoother and the speed is more uniform. The method of constructing the shafting boxes and relating equipment has varied considerably in past years. The different manufacturers have adopted their own particular ways. Some three or four systems have been introduced and each is differently planned. Some attempt to follow the principle employed in the bicycle; all tend to one end.

Whatever the system, there is always wear. Mill mechanics often find that boxes wear, as shown in Figure 1. In this we have the box D, in which it can be seen that the parts are worn at F. Uneven adjustment of a wabbling shaft caused the wear. This, of course, leaves an opening at G, and the shaft will run badly. A pulley carrying a heavy belt might have been pulled by

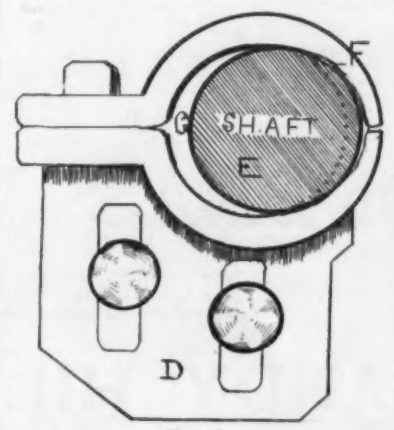

FIG. 1.

the belt so as to do this, but even then the box ought not to wear so much, and would not if all bearings were applied right. The point is to keep all nuts, bolts and caps of bearing tight and even and well oiled.

In mills where a number of countershafts are used, having a tight and loose pulley upon one end and a driving pulley upon the other, the strain being quite often in opposite directions, it requires considerable care and watching to keep them in perfect alignment, so that the belts will run correctly upon the face of the pulley. As the stress upon the tight and loose pulleys is much greater than that upon the opposite end, the tendency upon the boxes upon this end is to wear upon the sides next to the line shaft, while the wear upon the opposite box is in the opposite direction: and it is quite difficult to always keep such shafts in perfect alignment, so that the belts will run properly unless they are somewhat crowning in the centre, and the shorter the countershaft the greater the necessity for keeping it perfectly in line and parallel with the main shaft. Countershafts are frequently thrown out of line by the belt acting like this. When a bearing wears like the one in the drawing, the box should be removed and babbitted, thus evening it up again. Other indications of wear are shown in Fig. 2.

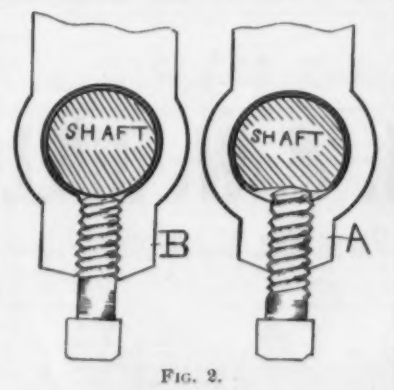

FIG. 2.

The end of the shaft is seen at A and B. It shows the idea in one glance, better than pages of description. Suppose you want to set the levers. Could you do it with a big hole in the shaft like that in A? Yet you will find such holes. They are the most provoking things. You set your shaft so that the levers stick in the grooves, and then fasten the parts, and suppose that you are all right; but before you leave the set screw has worked back into the "old rut." There is one thing certain—the thing will keep you at it all the time until you make it so that the set screws will hold in only one place, and that the right place. This can be done by taking out the shaft and getting the end made round and true in the forge, or possibly by putting the set screw in the hole that it wants to be in, and then bending the shaft so that the levers will come just right. This is, of course, a particular thing to do. Adjustments of this sort are needed often; sometimes in the shafting of the plant, and sometimes in single machines.

In shafting for driving this sometimes occurs, although the hangers may have been put up by the millwright perfectly in line, for after a time the shrinking timbers allow the bolts to become loose; for this reason, while the slots in the palm of the hanger are all right and very convenient for adjustment, there should also be a hole drilled in each palm, independently of this slot, so that when the hanger is once adjusted to its proper position, an extra bolt should be put in to prevent it from moving in the slots in case of shrinkage of timbers. In the absence of holes for this purpose a block of hardwood should be placed in the slot so as to hold the hanger in place.

Testing Caustic Soda.

It is difficult to apply tests to a solution of caustic soda or of soda salts which shall give direct evidence of the presence of soda as distinct from other alkalies. Perhaps the best ready qualitative test for soda lies in the intense yellow color given to the flame of an alcohol lamp or Bunsen burner when a platinum wire moistened with the solution to be tested is held in the flame. This test is, however, of such extreme delicacy, and the presence of compounds of soda in the minute quantities required to produce the yellow flame so well-nigh universal, as to render this test of little practical value. Probably the easiest way to prove the presence of soda in an alkaline solution is to work backward, and prove that it is not one of the other alkalies and consequently must be soda.

There are several direct tests which can be applied to prove the presence of soda or its salts; but as they require very careful manipulation to render their indications reliable, we have thought it best not to describe them here.

In a simple solution of caustic soda not containing other alkalies the percentage of soda, NaHO, may be easily determined by titration with standard acid solution. For this purpose a standard sulphuric acid of about normal strength (49 grams H_2SO_4 per litre) is perhaps best. Standard oxalic acid also answers the purpose well.

Forty grams of the soda solution or the solid substance caustic soda are to be weighed, and its solution made to 1000 c.c.; 100 c.c. of this solution is, if not entirely clear, filtered through a dry filter, since, if the filter were previously wet with water, it would dilute to a certain extent the 100 c.c. passed through it. The filtrate is transferred to a beaker or casserole and colored with litmus solution. Standard acid is run in from the burette until the original blue color changes to purple. The liquid is then boiled, when the blue color will generally again appear. Acid is again dropped in from the burette, a drop at a time, boiling for a moment after each addition, until the liquid shows a full red color, and no trace of blue or purple appears after two or three minutes' boiling.

The number of cubic centimetres of acid employed, reduced to normal cubic centimetres by the use of the appropriate factor, represents the percentage of caustic soda, NaHO, in the sample tested.

In commercial transactions caustic soda is usually quoted as 60 or 70 per cent. alkali, as the case may be.

In this connection, as in the alkali trade generally, the term "alkali" does not have its proper chemical significance, but signifies sodium oxide, Na_2O, or we may call it anhydrous caustic soda. Thirty-one parts by weight of this substance, Na_2O ("alkali")+9 parts of water = 40 parts of sodium hydrate or caustic soda.

This being the case, if we wish to find the per cent. of "alkali," Na_2O, in the sample tested as above, we must multiply the per cent. of caustic soda, NaHO, by 31 and divide the product by 40.

$$\frac{\%\,(NaHO) \times 31}{40} = \%\,(Na_2O),$$

or "alkali."

In Europe an arbitrary custom obtains of using the old numbers 32 and 41 in place of the corrected ones 31 and 40, respectively, in all instances mentioned above. This is now entirely without right or reason, and is oftentimes annoying to the American buyer, who finds a caustic reported as 72 per cent. alkali by the English chemist will be reported only 69.75 per cent. by the American test, which gives its true value. Of course, when one is aware of the custom, it is easy to make the allowance; but in the interests of truth and fair dealing every American buyer of alkali, either caustic or carbonated, should insist that payment be made on the basis of the American test.

The total amount of soda, Na_2O, present in a given solution, both as caustic and as salts of soda, is determined by means of a long and somewhat troublesome series of eliminations, by means of which the soda is finally obtained in the form either of pure sulphate or chloride, which may be weighed after ignition, and from its weight the soda calculated.—*Chemistry of Paper Making.*

Steam Pressure.

At the last meeting of the American Society of Mechanical Engineers the question arose whether a loss ensues from looping the high pressure diagram of a compound engine, the inference being that any work expended on the steam by the high pressure piston would be given back in the low pressure cylinders. This would be true if the exhaust valve did not open until the point on the return stroke where the expansion crosses the back pressure line, for in this case the steam would be simply compressed again after having been expanded below the receiver pressure, and the work put into compression is available in the higher pressure of the steam delivered to the receiver. But if the exhaust valv opens near the end of the stroke, forcing the high pressure piston to work against the receiver pressure for its full return stroke, the diagram is looped, negative work is performed and the steam delivered to the receiver is no greater in volume or in pressure.

What then, it will be asked, becomes of the energy represented by the loop?

When the high pressure exhaust valve opens, steam from the receiver, in flowing into the high pressure cylinder, is allowed to expand freely without doing work; and the work represented by the loop is expended in getting it back into the receiver again. It is a fact that the restored steam will have more heat in it by reason of this process, for it loses no heat when it is expanded freely, and absorbs some when it is compressed again; but the small amount of heat thus added to the receiver would hardly make a perceptible difference in the shape of the low pressure diagram, and we should get very little of it back into power again. The changing of heat units into power is a very inefficient process in the steam engine, and it will be a losing process to expand power already generated in drying or superheating receiver steam. It is evident therefore that there is a loss when the cut-off of the low pressure cylinder is so adjusted as to make the receiver pressure greater than the terminal pressure in the high pressure cylinder.—*Power.*

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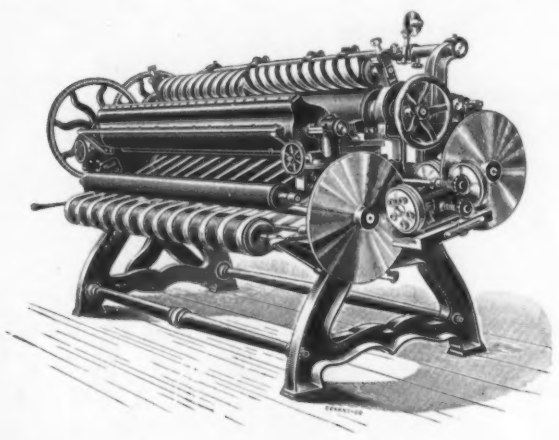

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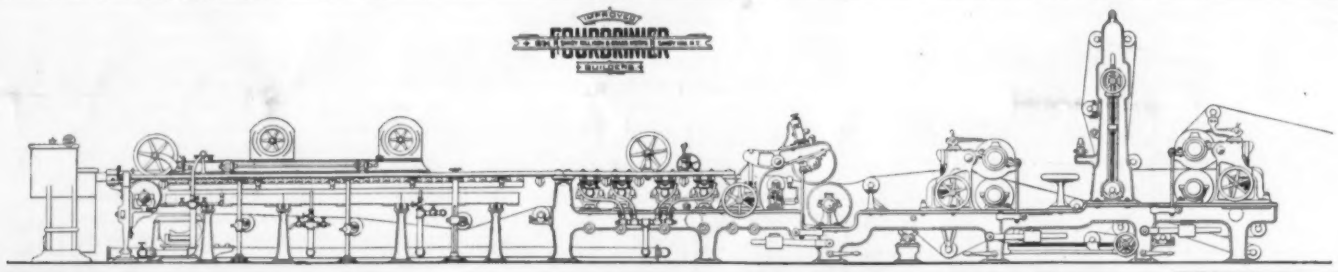

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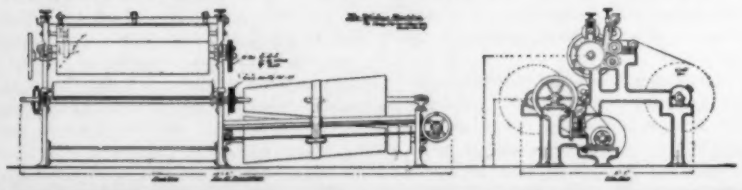

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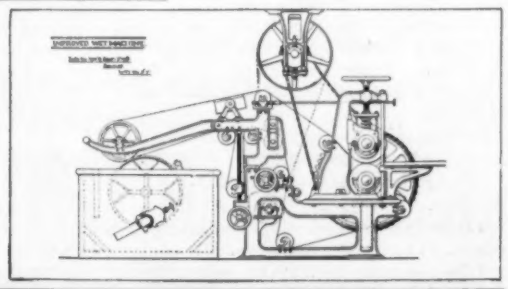

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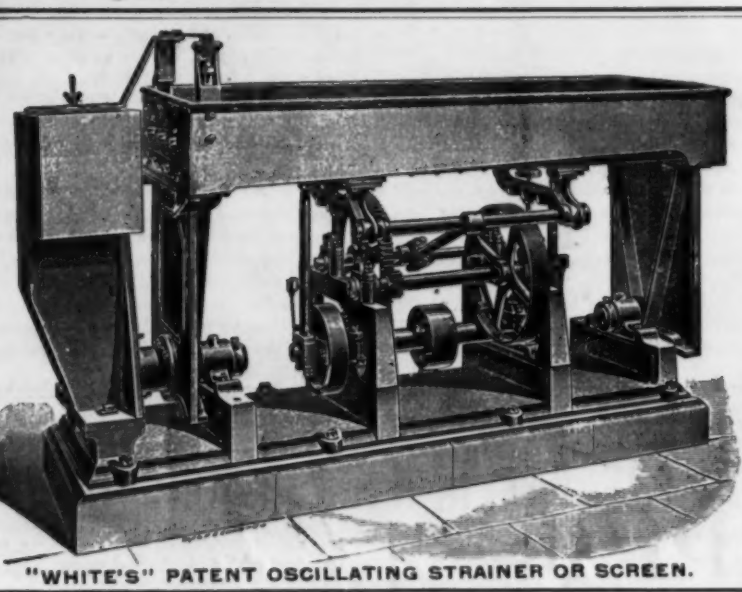

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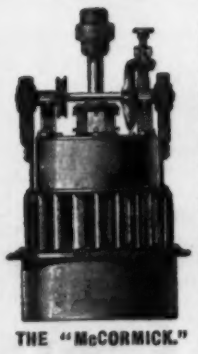

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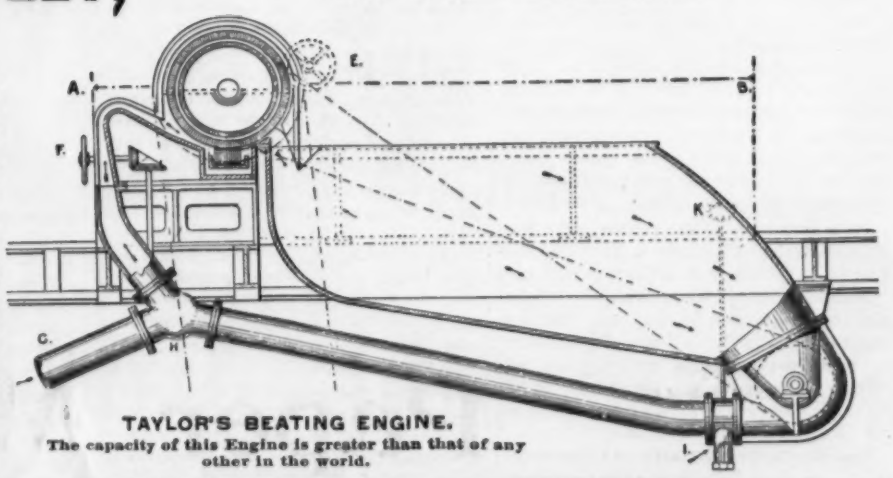

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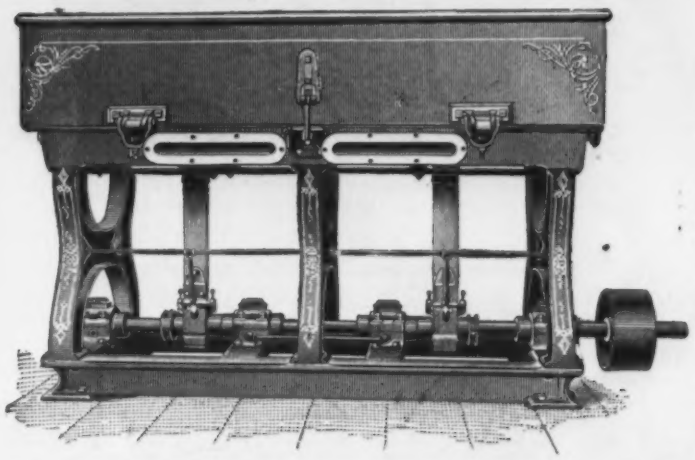

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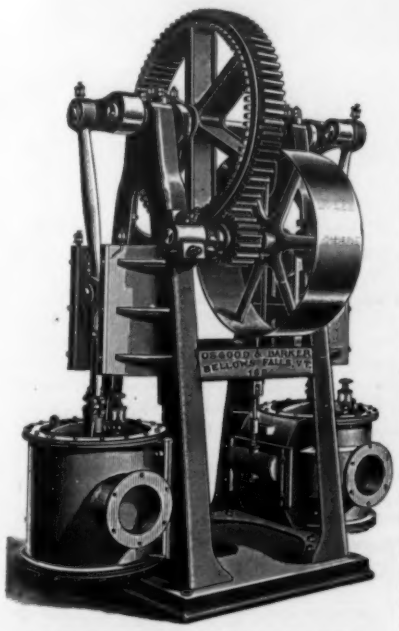

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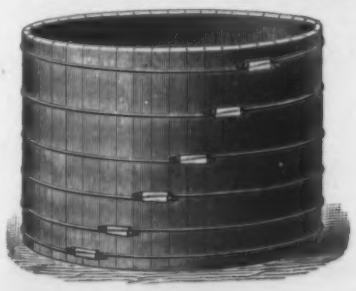

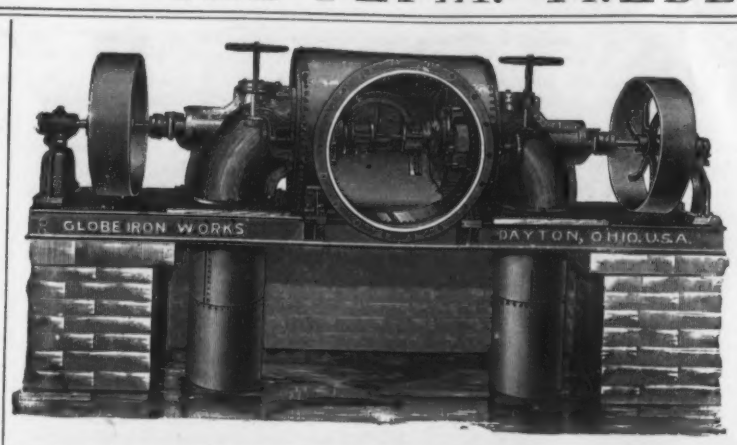

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Whole Gate,	16.06	119.17	141.58	205.27	79.76
¾ "	16.42	122.00	127.18	195.19	82.58
½ "	16.78	117.33	112.60	175.74	82.18
¼ "	17.03	111.33	98.12	149.99	79.31
⅛ "	16.88	118.67	82.07	118.40	75.52

TEST OF A 42 INCH WHEEL—JULY 14, 1894.

	Head.	Rev. per Min.	Cu. Ft. per Sec.	Horse Power.	Per Cent.
Whole Gate,	16.33	128.00	134.18	199.56	80.50
¾ "	16.56	134.80	120.85	188.14	83.09
½ "	16.59	129.33	104.85	162.89	82.77
¼ "	17.13	125.25	92.76	142.40	79.21
⅛ "	17.48	121.00	70.80	98.85	70.60

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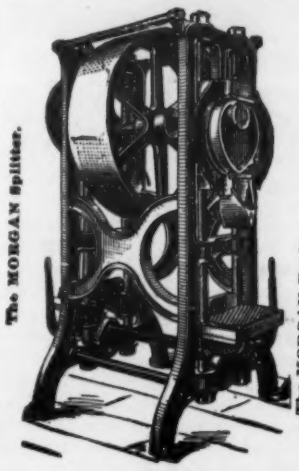

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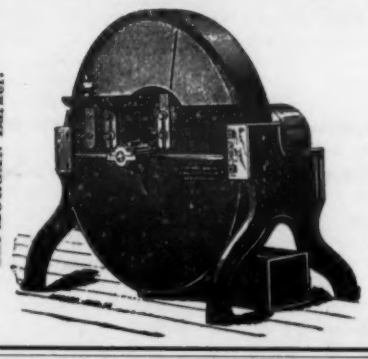

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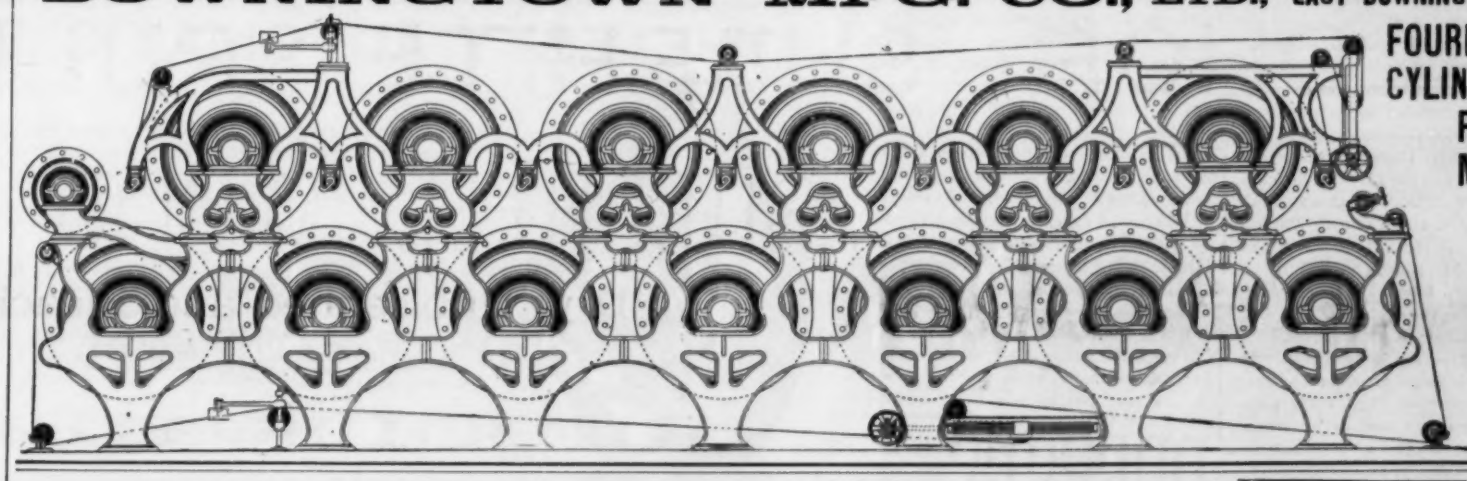

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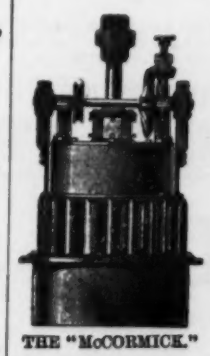

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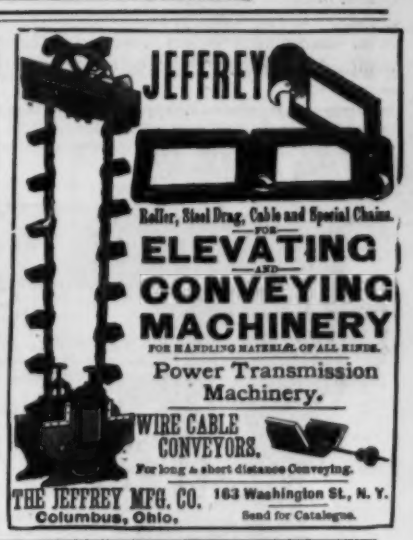

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The Russian Paper Trade.

In reviewing the development of the paper industries in Russia, a brief reference to the early times may not be out of place. The most ancient Russian books, the Tartar and Kalmuck Charters, were written in 1371 on a kind of paper made of cotton. Whether this paper was introduced from China, India or Persia has not been proved. While at Nuremberg, in Germany, the first paper mill was established in 1390; the first Russian mill was started almost two centuries later, under the reign of Ivan the Terrible, the first Czar, who introduced European culture and civilization into his empire. But the Russian paper was still of so inferior a quality that foreign paper was in general use, especially paper imported from England.

Peter the Great, after transferring the capital from Moscow to the new and beautiful city he founded on the banks of the Neva, started a large paper mill in the vicinity of St. Petersburg, the Imperial Dondouroosk Manufactory. This mill produced a much better quality, as it was conducted by experienced foreign paper makers and young Russians who had been sent abroad to study the industry. Yet the Russian paper was still of so bad a quality that the first Russian newspaper, started in 1703, by Peter the Great: "News about war and other events worth remembering and knowing, that have happened in the Moscovite Empire and all the neighboring countries," used German and English paper. Peter the Great also issued a decree that rags had to be collected, and he fixed the price at 8 half-kopecks (about 1 penny) per poud (about 36 pounds English weight). When Peter died there were already four paper mills existing in Russia, which number gradually increased.

During the reign of Empress Anna another large mill was built by the Government for supplying the Government offices with stamp paper. But the decree of Catherine II., that for official purposes only paper made in Russia should be used, greatly contributed to the development of paper industries in Russia, and the number of mills increased rapidly in consequence of this Imperial protection. Thus in 1765 there were already 13 mills, in 1766 23 and 1780 26 mills, with an annual output of 150,000 s. ruble (worth £75,000) worth of paper. In 1812 there existed already 64 mills, and in this year the Imperial State Paper Manufactory was started in St. Petersburg, which ranks to-day the foremost among the Russian paper mills. But this mill cannot classify among commercial undertakings, as it exclusively works for the supply of high class paper for bank notes, postage stamps, envelopes, deeds, bills of exchange and so on, which are engraved artistically, and printed in another department of the same establishment. In 1815 the number of mills rose to seventy-five.

While in Western Europe, through the invention and improvement of Mr. Bryan Donkin, the old and primitive way of making paper was abandoned, and the manufacture of continuous paper on self acting machines was generally adopted, Russian mills for a number of years kept to their old and primitive way of producing exclusively hand made paper. Emperor Alexander I., desirous of introducing all the latest improvements of English paper makers into Russia, ordered a mill to be erected at Peterhof, where the machines for making endless paper were first used. These machines were bought from Messrs. Donkin. The first machine sent to Russia was in 1825 for St. Petersburg, then followed Moscow, and in 1837 one for the Bank of Poland, in Warsaw. The Imperial Peterhof Paper Manufactory was to serve as a model mill to others. The first results of this mill, however, were not very encouraging, both from a technical and more especially from a commercial point of view, which failure may be attributed to the extravagance and mismanagement. The aspect of affairs changed when a Russian specialist, Mr. Kazin, was appointed director. During the six subsequent years of his management not only were no losses sustained, but a net profit of 1,230,000 rubles (£123,000) was realized, and the paper produced was of highest quality.

The original plan of the Emperor—that this establishment should supply a sufficient quantity of first-class paper to satisfy home demands and exclude foreign-made paper—failed, for the Imperial Peterhof Paper Manufactory continued to produce a first rate paper, but the prices for it were so dear as to make it out of reach to most consumers. This fact, and the high development of private mills, caused the closing of this model mill in 1840. The progress of civilization, as well as the protective laws of the Government, led to the increase of private mills. From 1816 to 1841 the import of foreign writing paper into Russia was forbidden. In 1841 the import of paper from abroad was permitted again, but an almost prohibitive duty of 55 kopecks (1s. 1d.) per pound made, in fact, any import impossible. From 1850 to 1857 this duty was reduced to 5 rubles (10s.) per poud of 36 pounds. By-and-bye Russian mill owners commenced to introduce improved methods for paper making. Prince Gagarin, in the Government of Faroslaw, and Ousatscheff, in Moscow, were the first that introduced in 1837 the continuous paper making machines, and encouraged by the great success of this innovation other mill owners introduced the same machines. Thus in 1850, out of the 159 mills existing then in Russia, producing 3,225,000 rubles' (£322,500) worth of paper annually, twenty-nine were using continuous paper machines, producing 2,000,000 rubles' worth of paper, or about 62 per cent. of the total amount.

The following figures will illustrate best the development of paper industries in Russia:

Period.	Number of Mills.	Yearly Production in Rubles.	Number of Hands.
1862	165	5,682,172	12,280
1870	126	9,568,000	10,390
1881	139	13,677,000	11,510
1884	140	14,697,000	13,304
1890	148	18,630,060	14,200
1893	156	21,690,000	16,350

The comparison between the number of mills existing in 1862 with that existing in 1893 shows that the number has decreased by nine, while the annual production has become more than four times as big. With the progressive improvement of machinery the expenditure of large sums of money was necessary for the purchase of the latest machinery, with more efficient and productive methods, and those mill owners who had not the means to improve their mills had to close their establishments, while all others rapidly increased. All in all, the general progress of the paper making trade in Russia was systematic, even uninterrupted and comparatively rapid, thanks to the protective duty.

The duty of entry for paper goods into Russia amounts per poud of 36 pounds, for common packing paper, pasteboard and cartonnage paper, to 3 rubles and 30 kops., payable in gold; writing paper, paper for printers, lithographers, bookbinders, with ornaments, tissue paper, cigarette paper, colored paper, envelopes, artificial flowers made of paper, &c., to 8 rubles and 75 kops.; oleographs and chromo-lithographs, to 5 rubles; notes, cards, plans printed, lithographed or photographed, to 3 rubles 20 kops.; cuffs, collars and fronts made of paper, to 2 rubles and 40 kops., payable in gold. The price of paper varies from 3 to 10 rubles per poud. At present the usual prices are: Wrapping paper, 3 rubles per poud; unbleached writing paper, 6.61 rubles; the same, half bleached, 7.25; the same, bleached, 8.50; bleached and glazed, 9.25; the vergé, 11 to 14 rubles. Owing to the high duty an import for the medium and lower qualities is practically prohibitive, so that the higher and highest duties alone are imported.

In spite of the development of the Russian paper making trade, it is not yet in a position to supply home demands, and the import of foreign paper goods, especially those of higher and highest qualities, still continue to increase. From 1870 to 1880 the importation of paper has been augmented from 899,074 to 2,065,796 roubles, as shown by the following table, giving the exact amount passed through the European frontiers:

VALUE OF PAPER IMPORTED.

	Rubles.		Rubles.
1870	899,047	1876	2,412,385
1871	1,200,736	1877	1,080,450
1872	1,686,805	1878	1,751,869
1873	1,938,350	1879	1,846,947
1874	2,117,171	1880	2,065,796
1875	2,539,921		

Since 1880 the import has continued in general to increase, but exhibits some considerable fluctuations. Thus in 1884 the amount passed through the European frontier was valued at 2,135,435 rubles, and in the following year it rose to 5,087,544; in 1886 it declined to 2,570,106 roubles. The great increase in 1885 was due to sudden imports of paper through the frontier of Finland to the amount of 2,900,000 rubles, while during the preceding years hardly any paper had been imported from Finland, and in 1886 this item declined 72 per cent.

The next table shows the value of the import of paper for the subsequent years, and as in the previous tables, the figures refer to the import through the Western frontiers, including the border between Finland and the other ports of the Russian Empire, as a great deal of paper comes to St. Petersburg from the Grand Duchy. Finland, the import of books and prints is included:

Varieties and value of paper imported.	1887.	1888.	1889.	1890.
	Rubles.	Rubles.	Rubles.	Rubles.
Paper	1,937,721	1,711,364	2 238,026	2,161,480
Cardboard	134,734	155,209	214,667	216,322
Books	1,659,794	1,645,892	1,771,276	1,755,066
Pictures and hand drawings	286,457	103,893	235,226	157,868
Prints and engravings	113,796	276,718	146,796	127,957
Maps and music	110,410	136,847	137,560	128,815
Wall papers and borders	118,948	87,816	102,693	95,649
Wood pulp and papier maché	1,027,634	1,197,965	1,530,220	2,077,757
Paper cuttings and rags	330,696	540,204	220,889	150,404
Totals.	5,718,190	5,935,908	6,580,323	6,811,320

The first of these items is the largest, its average for the four years being valued at 2,024,295 rubles. It may be subdivided as follows:

(*a*) Sized paper of different qualities, average for the four years, 1,022,733 rubles.

(*b*) Unsized white and colored paper, without ornamentation: yearly average, 66,965 rubles.

(*c*) Printing and other papers, 155,272 roubles.

(*d*) Cigarette, Chinese wrapping and other papers, 767,167 rubles. The item entered as books is considerable, and fairly constant, being on the average to the amount of 1,708,005 rubles. It may be subdivided into four categories, as follows: (1) Books printed in foreign languages, average import value, 1,622,730 rubles. (2) Books printed abroad in the Russian language and unbound, yearly average import, 6,774 rubles. (3) The same unbound, 2,898 rubles. (4) Ledgers and copy books, 75,434 rubles. Wood pulp is imported in large

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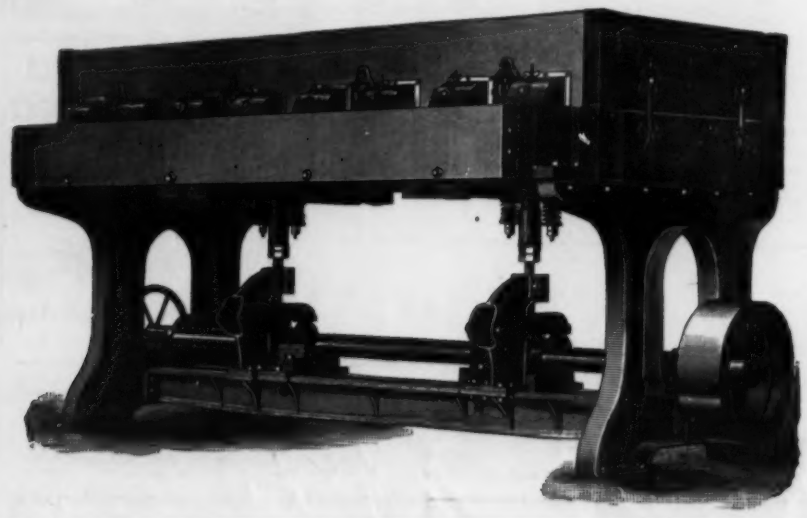

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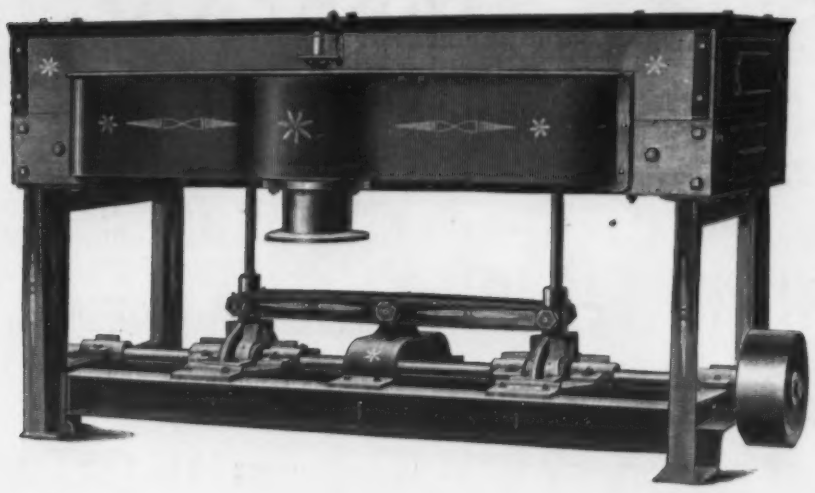

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OTHER SCREENS ARE BETTER.

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quantities, and although this item fluctuates considerably, it is greatly increasing. In 1887 it was set down at 1,027,634 rubles, and in 1890 it rose to 2,017,735 rubles, or almost doubled in the space of four years. This industry may be divided into two distinctive classes:

(*a*) Wood pulp pressed into sheets, having the appearance of cardboard and papier maché: Average value, 623,301 rubles. The greater part of this comes from Finland, which supplies on the average 599,011 rubles' worth, or about 96 per cent. of the whole quantity.

(*b*) Wood pulp in any other form than sheets, and all other kinds of paper stuff or pulp: Yearly average value, 802,087 rubles, Finland supplying to the amount of 633,200 roubles, or about 78.75 per cent.

The export of Russian paper is limited, and amounts to 160,000 to 180,000 rubles yearly. The paper is exported to Central Asia, Persia, Turkey, Bulgaria, &c. A decrease is shown, especially with regard to the export of rags, that before 1885 amounted to above 1,000,000 rubles, but now only to scarcely one-third that amount. This is due to an increased demand for home consumption, to the existence of an export duty of 30 kopecks for the poud, and also to the temporary restriction on export from sanitary reasons.

In conclusion, the various data quoted in connection with the paper making industries in the Russian Empire may be condensed into the following figures, which show the state of this industry at present:

Paper mills	271
Hands employed	24,710
Total value of production.....rubles.	22,500,000
Average value of production	83,059
Value of labor per man	901.9
Import	4,250,000
Export	500,000
Home consumption	26,000,000
Home consumption per head, counting inhabitants, 0.22 rubles—not quite 6d.	120,000,000

—*British and Colonial Printer and Stationer.*

Wire Rope and Its Uses.

(Continued.)

The rope that is ordinarily best adapted for power transmission is "seven wire rope"—that is, rope composed of six strands of seven wires each, laid upon a centre strand of hemp. This grade of rope is selected as possessing the greatest degree of durability, while it has the disadvantage of being less flexible than the twelve or nineteen wire ropes. These latter are, however, seldom used except in cases where it is either undesirable or impossible to make use of sheaves or transmission wheels of large diameter.

In order to secure the requisite driving friction between the rope and the terminal sheaves, or transmission wheels, as they are commonly called, these wheels must necessarily be of peculiar construction. The groove of the wheel is cut at a sharp angle the same as for hemp rope, but unlike ordinary practice with hemp rope driving wheels, the friction between the sides of the groove is not relied upon for driving. The bottom of the groove is cut in such form as to admit of the introduction of some soft substance which is better adapted for gripping the rope, while it does not wear the wires as would the cast iron of the wheel.

This soft material or filling, as it is called, must be somewhat yielding and at the same time durable. Various substances have been used for this purpose, such, for instance, as blocks of hardwood with the end of the grain outward, vulcanized india rubber, small pieces of leather packed closely together and tarred oakum or yarn. Of these various materials it is probable that in most cases the leather pieces will give the greatest satisfaction, the rubber, while it is best for some reasons, being altogether too soft and not sufficiently durable. Sometimes the leather and rubber fillings are put together in alternate layers, the leather having been soaked in tar, and when thus used it is considered to be the most satisfactory, possessing all of the desirable qualities of a good filling. The groove in the wheel into which the filling is placed is so shaped that the filling may be slightly compressed and driven into place in such manner as to require no additional fastening.

In cases where the rope is liable to considerable lateral vibration the flanges are sometimes covered with leather to prevent any excessive abrasion of the rope. The leather extends below the filling and is partially secured by it, while the outer part is riveted to the flange of the wheel. By many engineers, however, this is not thought to be good practice. It is more often that, in cases where excessive vibration is to be expected, the flanges of the wheels are formed at a greater angle than usual, and we sometimes find wheels of this kind the sides of whose flanges are at an angle of 90° with each other. The filling is also made wider, so as to lessen the liability of contact between the flange and the rope.

Sometimes in long spans it is necessary to use intermediate supporting sheaves for the rope. In most such cases it is necessary to support only the slack side of the rope, as the driving side has considerably more tension than the other. Where it is advisable to support both sides fewer supporting sheaves will be required on the driving side than on the slack side of the rope. These supporting sheaves should in all cases be supplied with proper filling, the same as the driving wheels.

The sheaves used for the support of the driving side of the rope must not be of smaller diameter than the driving wheels, for the strain in the rope due to bending around the wheel is the same in this case as in the other. The extent to which the wheel is enveloped by the rope makes no difference whatever in respect to the bending strains produced in the rope itself, this strain depending only on the diameter of the wheel or sheave. With the slack side of the rope, however, the case is slightly different; here the tension on the rope is of course considerably less, and therefore the rope is able to bear more bending strain. For this reason it is allowable to make these sheaves considerably smaller than the driving wheels without injury to the driving rope.

There are, however, many objections to the use of long single spans, even when the rope is supported as indicated above. When the power is to be transmitted to a considerable distance it will be found to be more satisfactory to install several shorter ropes without supporting sheaves. It is then necessary to make use of intermediate stations for the transfer of the power from rope to rope.—*Industrial Record.*

TABLE SHOWING THE DAILY CAPACITY IN POUNDS OF THE PAPER AND PULP MILLS OF THE UNITED STATES NOW RUNNING, AS REPORTED BY MANUFACTURERS FOR INSERTION IN THE TWENTY-FIRST EDITION OF LOCKWOOD'S DIRECTORY OF THE PAPER TRADE, 1895–6 (*a*).

PREPARED BY HOWARD LOCKWOOD & CO. FOR THE USE OF THE TRADE.

STATES.	Bind'r's and Trunk Board.	Blotting.	Book and News. (*b*)	Build'g, Roofing and Sheath'g	Card.	Carpet Lining.	Chemical Fibre. (*c*)	Colored. (*d*)	Cotton Hull Fibre.	Fibre Board.	Fric't'n Board.	Hanging and Curtain.	Leather Board.	Manilla.	Manilla Board.	Press and Album Board.	Straw Board. (*e*)	Straw Fibre. (*f*)	Straw Wrapping.	Tissue. (*g*)	Tissue Manilla.	Wood Pulp. (*h*)	Wood Pulp Board.	Wrapping. (*i*)	Writing. (*j*)	Total Capacity of States.
Alabama	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4,000	....	....	....	4,000
California	2,000	....	39,000	....	....	....	....	....	....	....	....	....	....	3,000	....	....	2,000	....	27,000	1,000	....	20,000	....	3,000	....	97,000
Colorado	....	....	48,000	....	....	....	16,000	....	....	....	....	....	....	13,500	....	....	....	....	3,500	....	....	32,000	....	3,000	14,000	130,000
Connecticut	36,500	4,000	96,000	22,000	18,000	....	30,000	45,500	....	6,000	1,000	3,000	13,000	72,500	8,000	37,800	47,000	....	....	13,000	1,500	....	40,000	55,000	38,500	588,300
Delaware	....	....	86,000	....	....	....	50,000	5,000	....	....	....	....	....	16,000	....	....	....	....	....	....	180	....	....	1,000	2,000	160,180
Dis. of Columbia	....	....	3,000	....	....	....	....	....	....	....	....	....	....	2,000	....	....	....	....	....	....	....	....	....	....	....	5,000
Georgia	....	1,000	8,000	....	....	....	....	....	....	....	....	....	....	5,000	....	....	....	....	....	....	....	10,000	....	10,000	....	34,000
Illinois	....	....	....	45,000	....	15 000	....	....	....	....	....	....	....	12,000	....	....	260,500	....	208,700	....	....	20,000	....	106,500	....	667,700
Indiana	8,000	....	113,000	75,000	....	....	80,000	4,000	....	....	....	....	....	55,000	....	....	396,000	....	85,000	5,500	1,500	145,000	80,000	79,500	....	1,127,500
Iowa	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	10,000	20,000	62,000	....	....	....	....	14,000	....	106,000
Kansas	....	....	....	....	....	....	....	....	....	....	....	....	....	12,000	....	....	....	....	23,000	....	....	....	....	22,000	....	57,000
Kentucky	....	....	20,000	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	20,000
Maine	....	....	627,000	....	....	....	708,000	....	....	....	....	....	22,500	173,000	....	....	....	....	....	....	....	815,000	71,000	10,000	5,000	2,431,500
Maryland	3,000	....	127,000	5,500	....	....	66,000	....	....	....	....	10,000	....	56,500	....	....	35,000	....	27,700	....	....	20,000	....	3,000	....	353,700
Massachusetts	6,000	19,000	583,000	71,000	77,000	14,500	65,000	21,000	....	....	....	16,000	29,000	256,500	....	2,000	3,000	....	....	5,600	2,400	92,000	....	61,000	529,500	1,853,500
Michigan	4,000	12,000	149,000	2,500	4,000	....	110,000	17,000	....	....	....	....	....	13,000	....	....	53,500	....	71,000	6,000	....	68,000	24,000	51,000	24,000	609,000
Minnesota	....	....	12,000	25,000	....	....	....	....	....	....	....	....	....	12,000	....	....	....	....	....	....	....	20,000	....	15,000	....	84,000
Missouri	....	....	....	10,000	....	....	....	....	....	....	....	....	....	....	....	....	....	....	8,000	....	....	....	....	10,000	....	28,000
Nebraska	....	....	....	30,000	....	....	....	....	....	....	....	....	....	....	....	....	....	....	20,000	....	....	....	....	....	....	40,000
New Hampshire	....	....	321,000	....	12,000	....	240,000	4,000	....	....	....	....	16,500	53,000	....	....	....	....	....	3,500	14,200	405,000	....	4,000	9,000	1,082,200
New Jersey	46,800	....	16,000	70,000	....	10,000	....	....	....	....	4,000	5,000	1,000	99,000	....	4,000	30,000	....	....	30,200	6,000	....	62,000	39,400	6,000	429,400
New York	10,000	3,000	1,379,000	105,000	43,000	2,000	684,000	23,000	....	22,000	....	172,500	10,000	554,500	8,000	3,000	106,000	....	190,000	22,100	33,500	2,047,400	104,000	138,000	43,000	5,703,000
North Carolina	....	....	6,000	....	....	....	....	....	....	....	....	....	....	4,000	....	....	....	....	....	....	....	5,000	....	3,000	....	18,000
Ohio	38,000	7,000	198,000	48,000	....	25.000	102,000	30,000	....	....	4,000	....	....	186,000	....	....	301,000	....	138,000	8,000	....	26,000	....	129,000	30,000	1,460,000
Oregon	....	....	72,000	....	....	....	32,000	....	....	....	....	....	....	6,000	....	....	....	....	10,500	2,000	....	81,000	....	8,000	....	211,500
Pennsylvania	44,500	....	437,400	186,000	6,000	11,000	344,000	24,000	....	....	....	16,000	3,500	184,600	....	5,500	26,000	....	8,800	6,300	10,200	86,000	8,000	97,000	61,500	1,566,300
South Carolina	....	....	....	....	....	....	10,000	....	....	....	....	....	....	8,000	....	....	....	....	....	....	....	....	....	....	....	18,000
Tennessee	....	....	6,000	....	....	....	....	....	24,000	....	....	....	....	2,000	....	....	....	....	....	....	....	12,000	8,000	4,000	....	56,000
Texas	....	....	....	....	....	....	....	....	....	....	....	....	....	4,000	....	....	....	....	6,000	....	....	....	....	4,000	....	14,000
Vermont	....	1,000	182,000	....	20,000	....	30,000	....	....	4,000	....	6,000	2 000	106,000	....	....	5,000	....	....	3,200	10,000	330,000	25,000	6,000	8,000	738,200
Virginia	....	26,000	3,000	....	6,000	....	40,000	....	....	....	....	....	....	....	....	....	....	....	....	....	....	12,000	....	10 000	9,000	94,000
Washington	....	....	14,000	....	....	....	8,000	....	....	....	....	....	....	11,000	....	....	....	....	4,000	....	....	12,000	....	4,000	5,000	58,000
West Virginia	....	....	20,000	....	....	....	90,000	....	....	....	....	....	....	11,000	....	....	24,000	....	13,000	....	....	90,000	....	10,000	15,000	273,000
Wisconsin	....	....	719,000	10,000	....	7,000	253,000	9,000	....	....	....	....	....	157,000	....	....	45,000	....	43,000	8,000	....	590,000	20,000	23,000	90,000	1,974,000
Totals	198,800	73,000	5,284,400	695,000	186,000	84.500	2,958,000	172,500	24,000	32,000	9,000	228,500	97,500	2,088,100	16.000	52,300	1,544,000	20,000	949,200	114,400	79,480	4,930,400	442,000	923,400	889,500	22,091,980
" for 1894–5.	223,300	63,500	4,923,400	640,000	195,000	70,500	2,526,000	171,500	12 000	25,000	9,000	234,500	87,000	2,007,600	1.000	27,800	1,574,200	20,000	1,193,200	104,200	79,680	4,705,900	368,000	856,400	877,500	20,996,180
	24,500	9,500	361,000	55,000	9,000	14.000	432,000	1,000	12,000	7,000	....	6,000	10,500	80,500	15,000	24,500	30,200	....	244,000	10,200	200	224,500	74,000	67,000	12,000	1,095,800
Percent. of gain.	....	15	7¼	8⅛	....	19⅛	17 1/10	1⅑	100	28	....	....	12 1/13	4	1500	88¼	....	....	....	9⅛	....	4¼	20⅛	7⅛	1⅛	5⅛
Percent. of loss.	10⅛	....	....	....	4⅛	....	....	....	....	....	....	2 6/11	....	....	....	1 1/13	....	....	20 8/11	....	⅛	....	....	....	....	....	....
Totals for '81	124,120	11,500	1,390,050	153,800	41,000	2,250	259,500	111,900	....	....	....	112,200	94,300	648,900	....	7,600	505,000	25,000	502,400	14,300	40,180	484,300	39,000	428,400	305,700	5,301,400
Totals for '83	165,320	15,000	1,682,650	272,800	82,600	38,800	466,000	95,760	....	....	....	154,300	77,100	879,100	....	8,600	743,800	23,000	645,700	24,350	45,130	633,450	43,000	489,400	354,900	6,940,760
Totals for '84	153,600	16,800	1,998,050	314,250	84,500	35,900	576,000	104,900	....	....	....	159,300	129,100	809,700	....	9,600	786,800	23,000	718,500	23,650	40,530	795,550	46,000	517,000	409,000	7,751,730
Totals for '85	184,050	15,800	2,029,350	313,750	89,500	42,900	587,000	108,650	....	....	....	191,400	101,500	949,250	....	12,000	828,800	17,000	760,500	24,700	50,130	835,830	58,000	523,750	407,700	8,131,560
Totals for '86–7	200,650	22,600	2,142,900	256,750	108,500	41,400	537,000	106,150	....	....	....	191,400	92,250	943,250	....	9,800	881,050	12,000	797,900	25,250	58,980	960,600	65,000	486,550	407,000	8,346,980
Totals for '87–8	187,150	22,600	2,279,400	387,000	103,750	53,900	602,000	110,400	....	....	....	185,100	85,750	1,039,200	....	11,800	941,250	6,000	759,500	30,550	64,780	1,085,900	61,000	480,600	456,200	8,953,830
Totals for '88–9	209,650	25,100	2,661,550	377,000	106,250	49,900	617,000	121,600	....	....	....	210,100	71,500	1,092,400	....	10,800	988,500	6,000	885,200	36,250	50,880	1,536,500	83,000	477,250	474,700	10,091,130
Totals for '89-90	217,200	24,100	2,837,850	444,500	138,750	58,500	866,500	113,300	....	....	....	228,600	87,500	1,228,600	....	15,800	1,117,500	6,000	925,400	33,850	46,580	2,607,600	95,500	583,750	567,100	12,244,480
Totals for '90–1	229,300	31,600	3,081,350	525,500	147,350	60,000	1,111,500	131,850	....	....	....	224,400	92,800	1,357,400	....	18,800	1,344,000	6,000	923,000	36,450	53,030	2,900,700	129,500	595,750	560,000	13,560,280
Totals for '91–2	212,800	43,600	3,735,150	498,000	149,850	64,500	1,543,500	140,600	....	....	....	249,200	86,500	1,531,400	....	23,800	1 433,500	46,000	958,900	77,500	59,730	2,953,700	136,000	685,750	589,600	15,219,580
Totals for '92–3	208,300	53,000	4,233,150	514,500	183,250	74,500	1,736,000	176,500	....	....	....	265,000	87,000	1,720,900	....	23,800	1,545,500	....	960,000	88,500	103,480	3,400,300	187,000	703,700	706,000	16,970,380
Totals for '93–4	214,300	63.500	4.922,400	590,500	178,000	80.500	2,210,000	178,000	....	20,000	5 000	270,500	95.000	1,908,100	....	27,800	1.671,580	....	1,063,650	111.700	96,180	4.285,400	352,000	755,700	863.900	19,963,710
Percent. of gain since 1881	60¼	534 9/11	280½	352	353⅛	3655⅛	1039 3/10	54½	....	....	....	103 7/11	3⅛	221⅛	....	588¼	205⅓	....	88 3/10	700	97½	918	103⅛	115½	191	316⅓
Percent. of loss since 1881	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	20	....	....	....	....	....	....	....	....

(*a*) This table shows the daily CAPACITY, *not the actual production* of all the mills. The basis of the table is the statement and *claims* of manufacturers. In some instances figures have been altered when manufacturers have reported a producing capacity which was evidently incorrect when compared with the size and number of engines, the power and other details in our possession, and which in themselves determine very closely what a mill can produce. About 8 2-5 per cent. of the mills were idle at last reports, the capacity of which does not appear in this table. Total number of mills as last reported, 1,292; idle, 101.

Inasmuch as collar and palm fibre are not now made, they have been dropped from this list.

(*b*) Every kind of book and news paper from all classes of stock is embraced in this column.

(*c*) These totals include the product of mills making chemical fibre solely, and a considerable quantity of fibre made by mills for their own use. The totals do not, therefore, represent the *entire* production of chemical fibre.

(*d*) All kinds of colored paper, except ordinary tinted book and writing, are included under this heading.

(*e*) This column includes many small "air dried" mills, whose product for the season aggregates only a comparatively small amount.

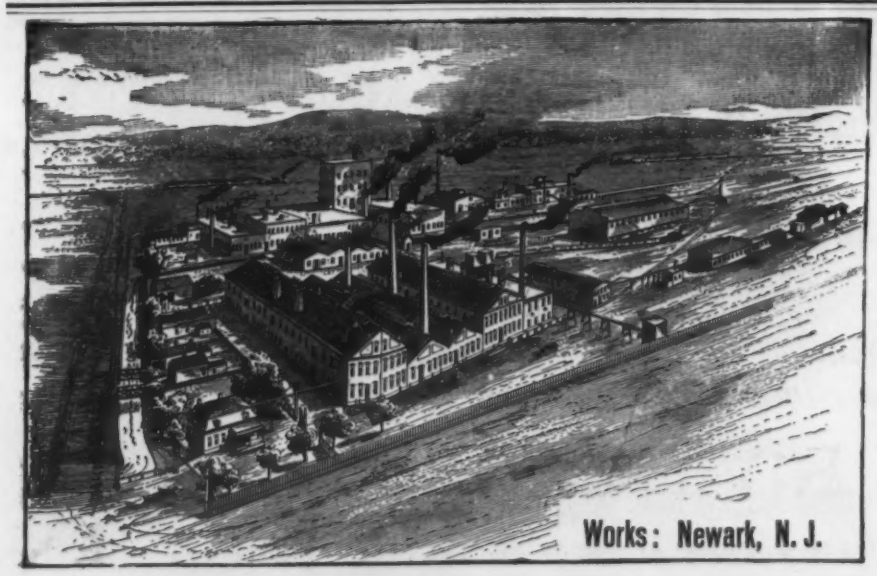
(*f*) This does not include pulp made from straw at regular print mills, but only at such mills as sell to paper makers.

(*g*) Includes all kinds of white and colored tissue.

(*h*) Some ground wood pulp made and used at the paper mill is not included in these aggregates.

(*i*) Includes all grades of wrapping and bogus, except straw wrapping.

(*j*) Includes all grades of bank note, ledger, flat and folded, tub and engine sized, and envelope paper.



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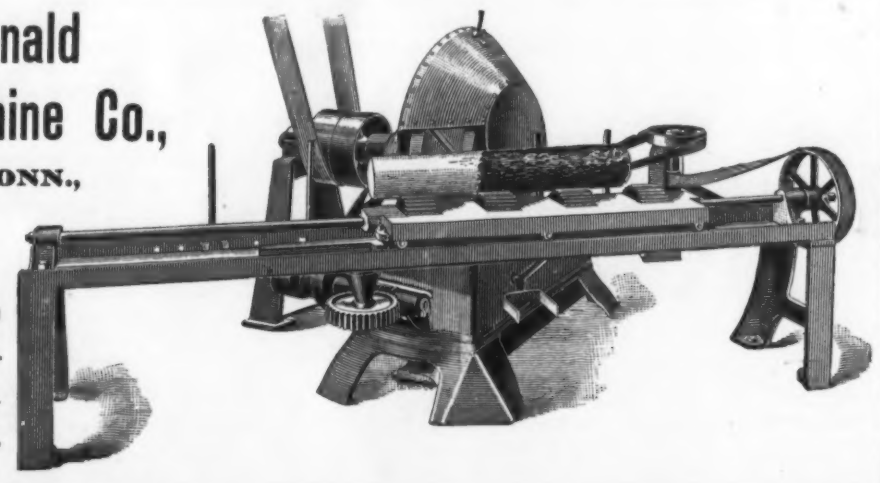

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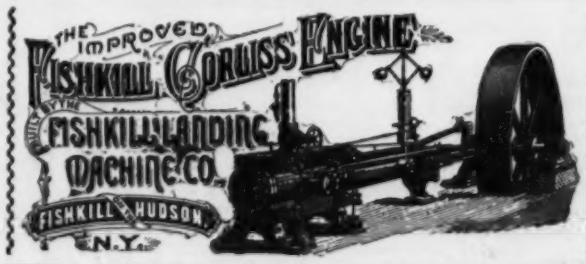

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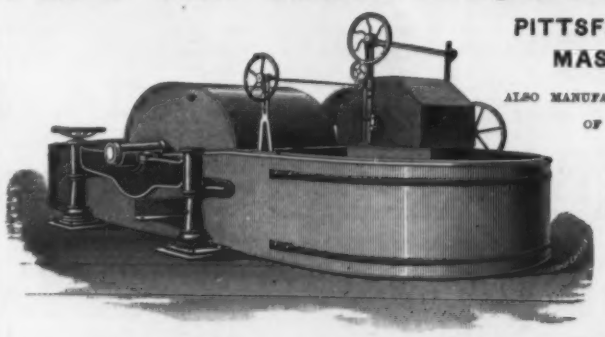

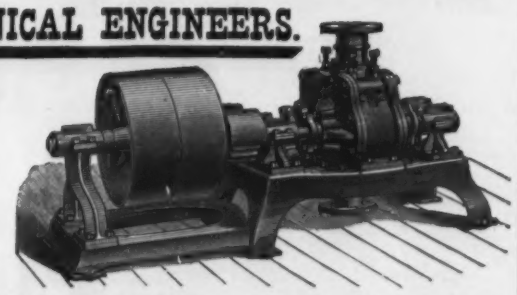

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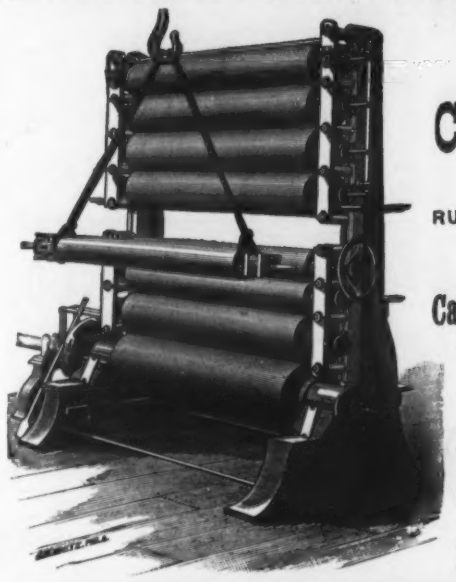

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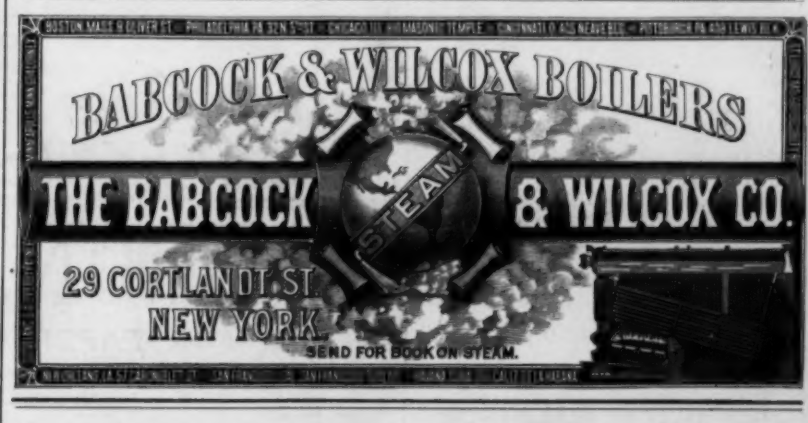

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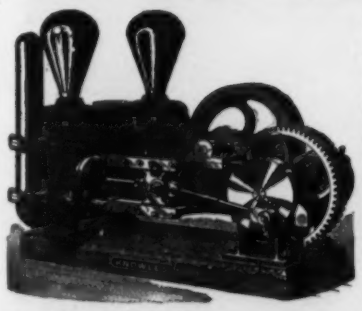

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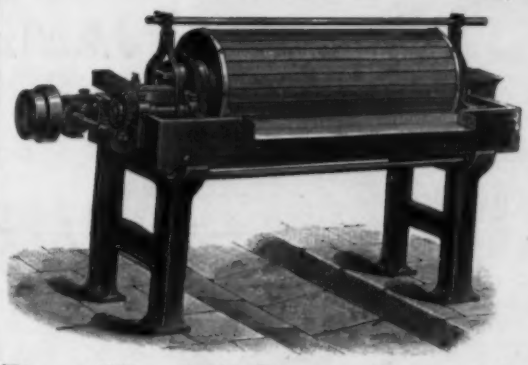

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Avoidance of stoppage.
Large working ability.
Small requirement of room.
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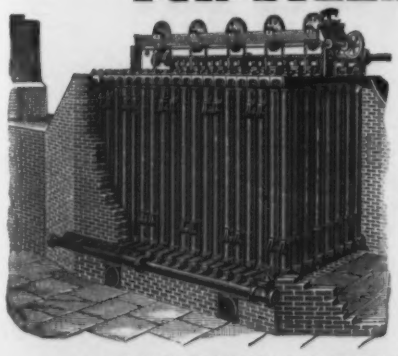

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High temperature of feed water, in many cases up to 30° degrees, thereby effecting a GREAT SAVING IN COAL.
Increased heating surface, thereby increasing capacity of the boilers.
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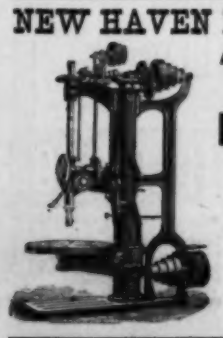

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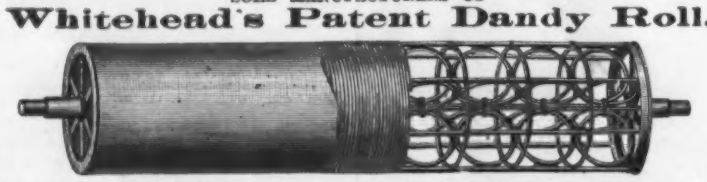

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